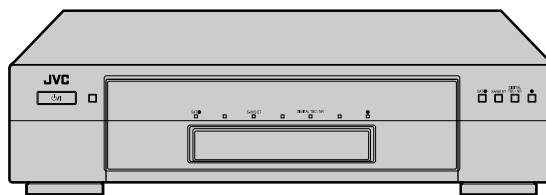


JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S9700EK/EU



TIME JOG & SCAN

SHOWVIEW[®]
DELUXE

Hi-Fi S-VHS
625

Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S9700EU)*

GENERAL

Power requirement	: AC 220 V – 240 V~, 50 Hz/60 Hz
Power consumption	
Power on	: 25 W
Power off	: 5.2 W
Temperature	
Operating	: 5°C to 40°C
Storage	: -20°C to 60°C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 437 mm x 106 mm x 352 mm
Weight	: 5.1 kg
Format	: S-VHS/VHS PAL standard
Maximum recording time	
(SP)	: 240 min. with E-240 video cassette
(LP)	: 480 min. with E-240 video cassette
(EP)	: 720 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines 50 fields
Recording system	: DA4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	
(SP/LP)	: 250 lines (VHS) 400 lines (S-VHS)
(EP)	: 220 lines (VHS) 350 lines (S-VHS)
Frequency range	: 70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output	: 21-pin SCART connectors: IN/OUT x 1, IN/DECODER x 1 RCA connectors: VIDEO IN x 1, AUDIO IN x 1, AUDIO OUT x 1 S-Video connectors: IN x 1, OUT x 1

TUNER/TIMER

TV channel storage capacity	: 99 positions (+AUX position)
Tuning system	: Frequency synthesized tuner
Channel coverage	: VHF 47 MHz – 89 MHz/ 104 MHz – 300 MHz/ 302 MHz – 470 MHz UHF 470 MHz – 862 MHz
Aerial output	: UHF channels 22 – 69 (Adjustable)
Memory backup time	: Approx. 60 min.

ACCESSORIES

Provided accessories	: RF cable, S-Video cable, Satellite Controller RM-SD1, Infrared remote control unit, "R6" battery x 2, S-VHS ET labels
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*Specifications shown are for SP mode unless otherwise specified.
E.& O.E. Design and specifications subject to change without notice.*

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The following table lists the differing points between Models (HR-S9700EK AND HR-S9700EU) in this series.



	HR-S9700EK	HR-S9700EU
VIDEO SYSTEM	PAL/NTSC PB ON PAL TV	PAL/MESECAM (MANUAL)/NTSC PB ON PAL TV
TUNER (BROADCASTING STANDARD)	I	B/G, D/K
TUNER (STEREO DECODER)	NICAM	NICAM/A2
TUNER (RF OUT SYSTEM)	I	G, K
DISPLAY (LANG.)	ENGLISH	14LANGUAGE
TIMER (VCR PLUS+)	VIDEO PLUS+ DELUXE	SHOW VIEW DELUXE
TIMER (VPS)	NOT USED	USED

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the  symbol and shaded () parts are critical for safety.

Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:

- | | | |
|--------------------|--------------------------------------|------------|
| 1) Insulation Tape | 3) Spacers | 5) Barrier |
| 2) PVC tubing | 4) Insulation sheets for transistors | |

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

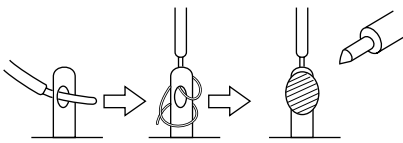


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

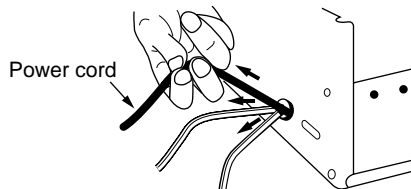


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) Connector part number : E03830-001

2) Required tool : Connector crimping tool of the proper type which will not damage insulated parts.

3) Replacement procedure

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

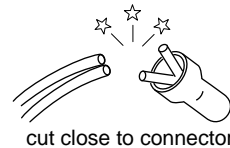


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

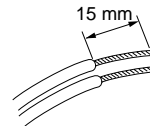


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

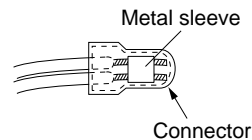


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

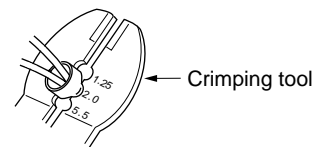


Fig.6

(5) Check the four points noted in Fig.7.

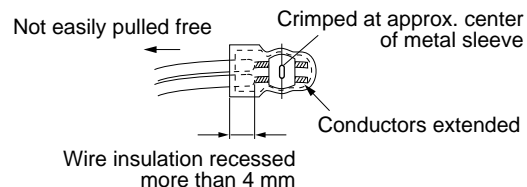


Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

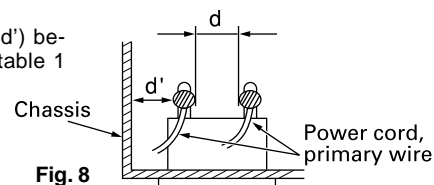
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

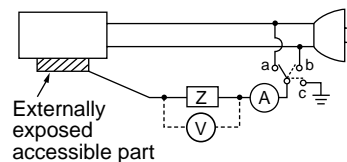


4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

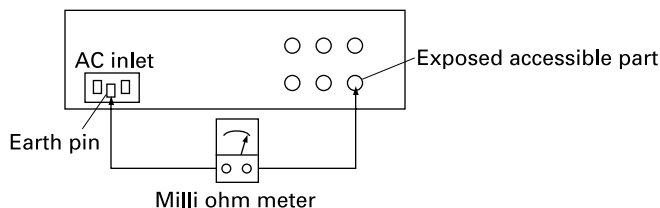


5. Grounding (Class 1 model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

Fig. 10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V 200 to 240 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II)	$d \geq 4 \text{ mm}$
			AC 1.5 kV 1 minute (Class I)	$d' \geq 8 \text{ mm (Power cord)}$ $d' \geq 6 \text{ mm (Primary wire)}$

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan		$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada		$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia		$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
			$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

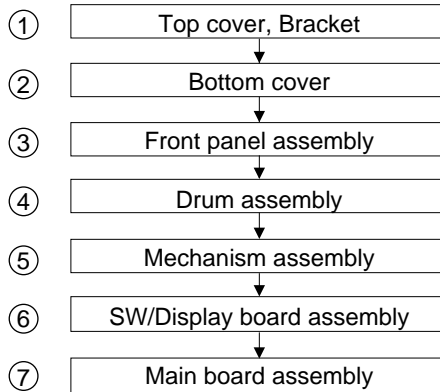
Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1 DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

<Example>

Step/ LocNo.	Part Name	Fig. No.	Point	Note
①	Top cover, Bracket	D1	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a), CN1(WR1a), 2(S1c)	<Note 1>

↑ (1) ↑ (2) ↑ (3) ↑ (4) ↑ (5)

(1) Order of steps in Procedure

When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

(2) Part name to be removed or installed.

(3) Fig. No. showing procedure or part location.

(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- The bracketed () WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.

(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

Step/ LocNo.	Part Name	Fig. No.	Point	Note
①	Top cover Bracket	D1	4(S1a),(S1b) 2(S1c)	
②	Bottom cover	D2	4(L2a), Foot (rear), 4(L2b), Foot assy, (S2a),2(S2b),4(L2c), 3(L2d)	<Note 2>
③	Front panel assembly (Membrane door assy)	D3-1 D3-2	9(L3), CN7002(WR3a) (S3a),Holder, 2(S3b),Damper assy, (S3c),(WR3b), (WR3c)	<Note 3a> <Note 3b> <Note 3c>
④	Drum assembly (Inertia plate) (Roller arm assy)	D4	3(S4), CON1(WR4a), CN1(WR4b) 4(L4a) (P4), (L4b)	<Note 3a>
⑤	Mechanism assembly	D5	CN1(WR5),2(S5a), (S5b),(S5c),2(L5)	<Note 3a> <Note 5a> <Note 5b>
⑥	SW/Display board assembly	D6	CN7001(WR6a), CN7191(WR6b), CN7192(WR6c), (L6a), REC safety board assy, 2(L6b), 4(L6c)	<Note 3a> <Note 6>
⑦	Main board assembly	D7	2(S7a), (S7b)	

<Note 2>

- When attaching the Bottom cover, make sure that the Earth plate of the Bottom cover is passed through the hole of the Bottom chassis and then touches the GND (Ground) on the Main board assembly.

<Note 3a>

- Be careful not to damage the connector and wire etc. during connection and disconnection. When connecting the wire to the connector, be careful with the wire direction.

<Note 3b>

- When reattaching the Front panel assembly, make sure that the door opener ③ of the Cassette holder assembly is lowered in position prior to the reinstallation.

<Note 3c>

- When fixing the screw (S3c), jointly secure the lug wires (WR3b and WR3c).

<Note 5a>

- When it is required to remove the screws (S5a) retaining the Mechanism assembly, please refer to the "Procedures for Lowering the Cassette holder assembly"(See on page 1-2).
- When removing the Mechanism assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Mechanism assembly.
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors on the Main board assembly (D3001: LED, Q3002: Start sensor, Q3003: End sensor, S3002: S cassette switch).

<Note 5b>

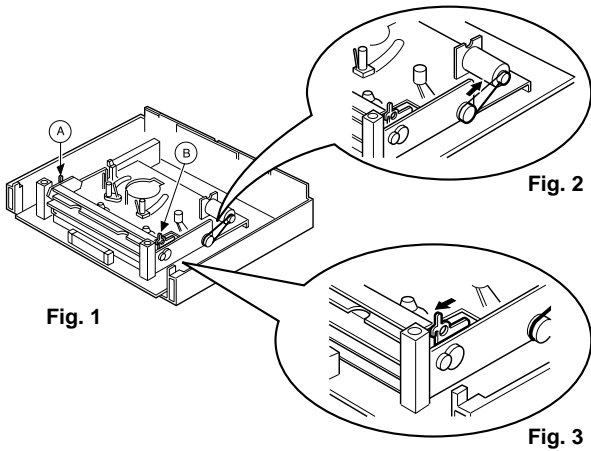
- The wire (WR5) has excess length that may be loose, as it is quite long. After inserting the wire and connectors, the loose portion of the wire should be taken up and accommodated between the A/C head base and the main deck.

<Note 6>

- The REC safety board assembly is attached to the SW/Display board assembly. It is therefore necessary to remove the REC safety board assembly before removing the SW/Display board assembly.

Procedures for Lowering the Cassette holder assembly

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two screws unscrewed when removing the Mechanism assembly.



Turn the loading motor pulley in the direction as indicated by Fig.2. As both (A) and (B) levers are lodged twice, push the levers in the direction as indicated by Fig.3 to release them. When pushing the levers, do it in the order of (A), (B), (B), (A). When the holder has been lowered, turn the pulley until the cassette holder is securely in place without allowing any up/down movement.

Procedures for Lowering the Cassette holder assembly

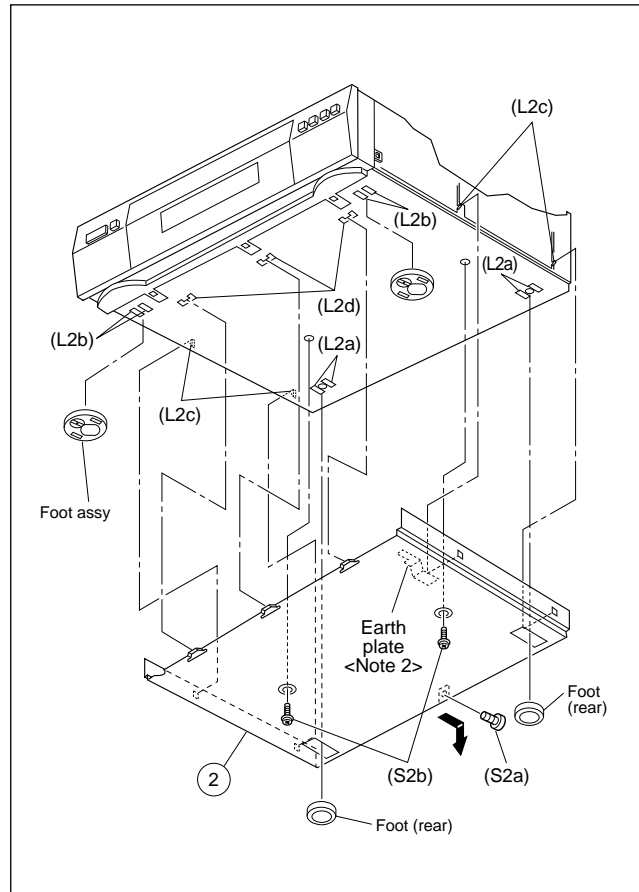


Fig. D2

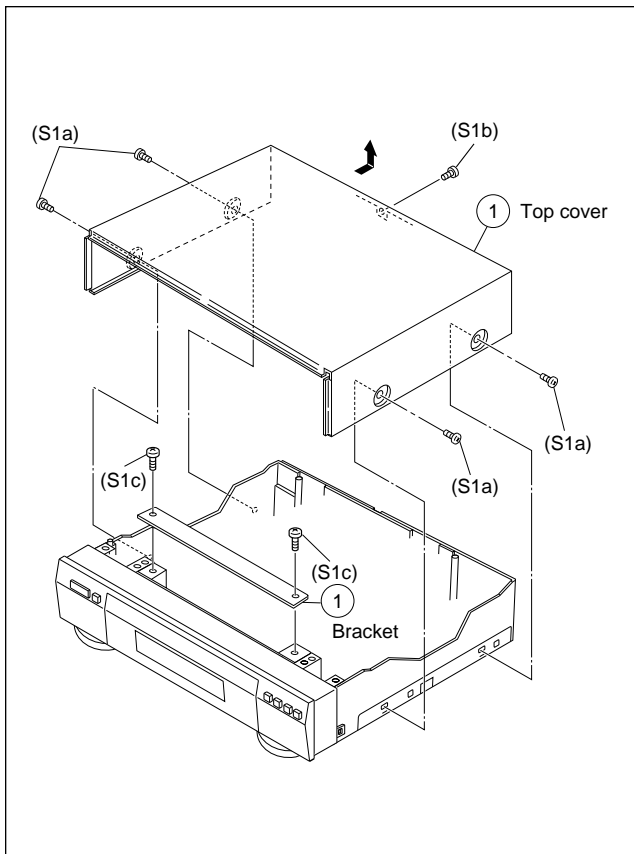


Fig. D1

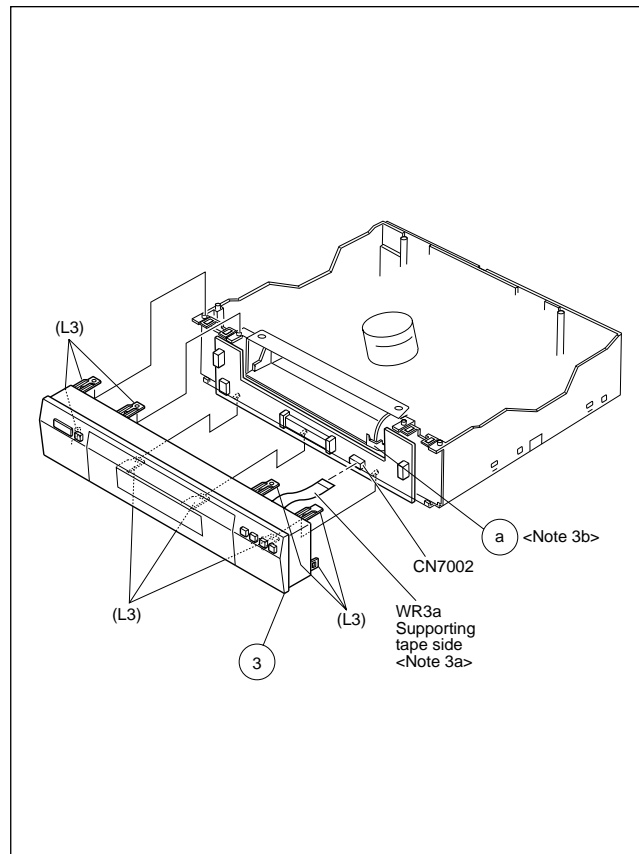


Fig. D3-1

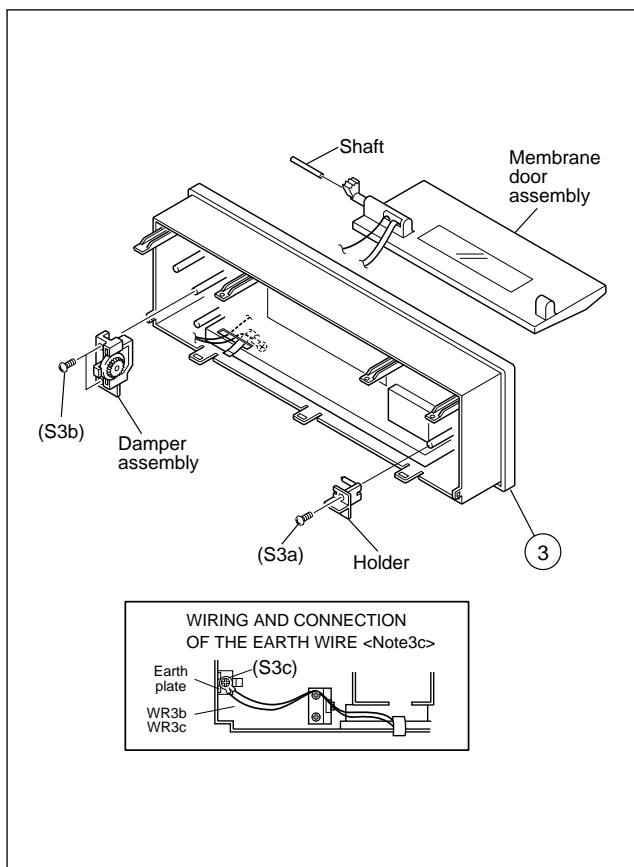


Fig. D3-2

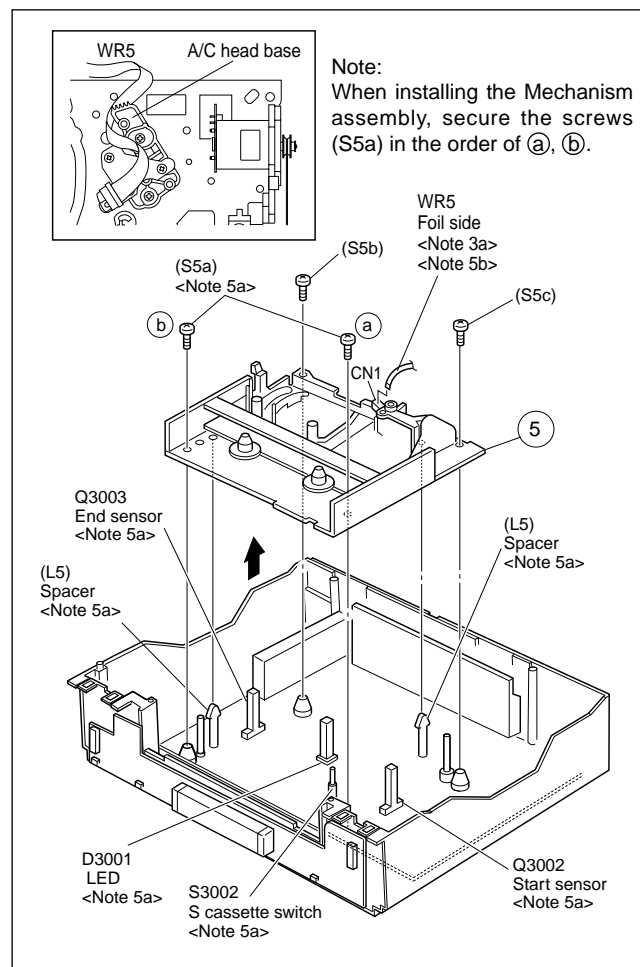


Fig. D5

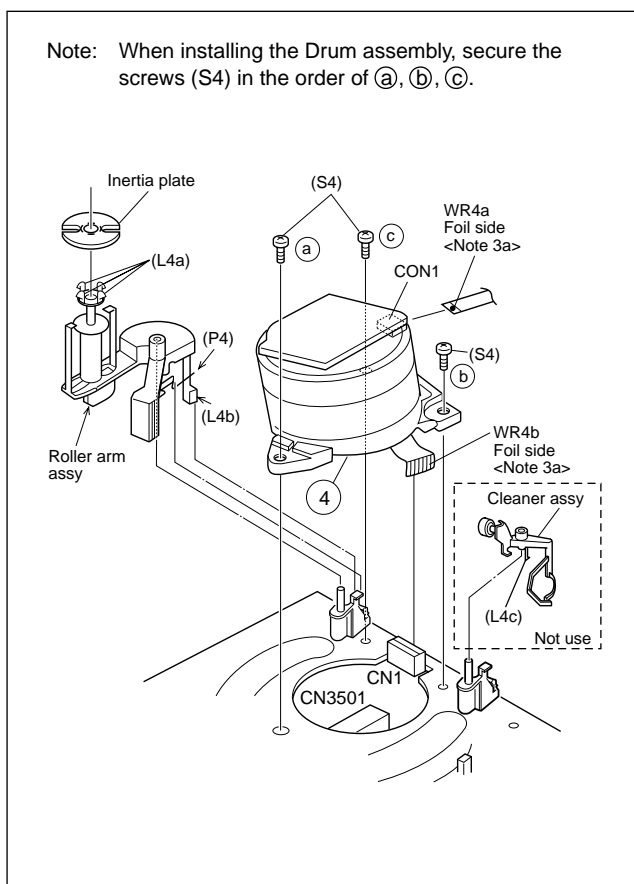


Fig. D4

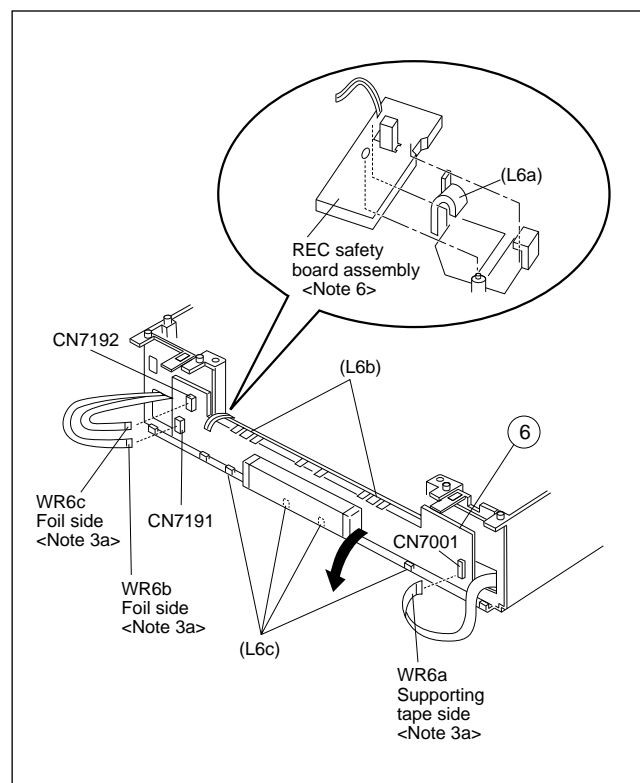


Fig. D6

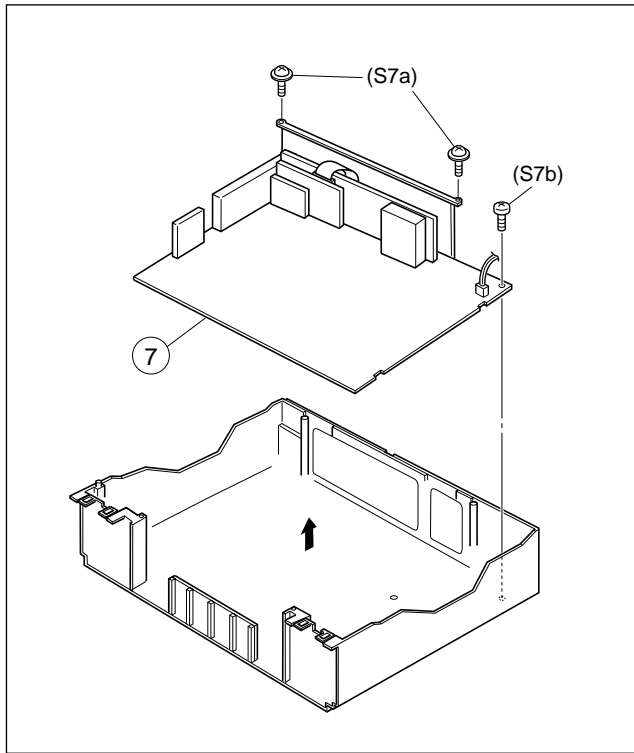


Fig. D7

1.4 SERVICE POSITION

In order to facilitate diagnosis and the repair of the Mechanism assembly, this unit is constructed so as to allow the Mechanism and Main board assemblies to be removed together from the Bottom chassis assembly.

1.4.1 How to take out the Mechanism and Main board assemblies

- (1) Remove the Top cover, Bracket and Front panel assembly. (Refer to 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
- (2) Lower the cassette holder, and make the preparations required in order to remove the screws from the Mechanism assembly. (Refer to the "Procedures for Lowering the Cassette holder assembly" on page 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)

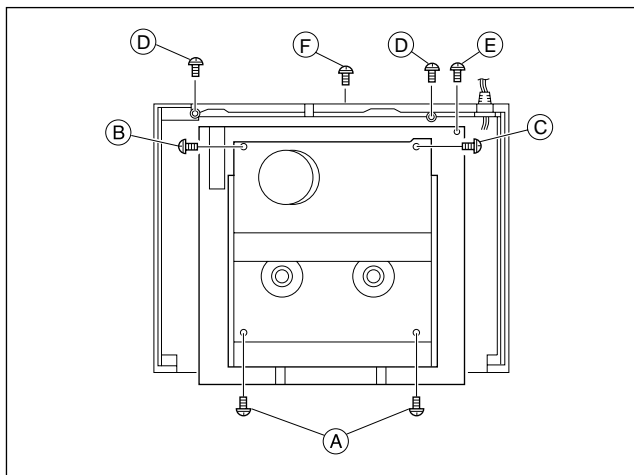


Fig. 1-4-1

- (3) Take out 2 screws (A), 1 screw (B) and 1 screw (C) as shown in Fig. 1-4-1.
- (4) Remove the flat wires from CN3011, CN901 and CN902 on the Main board assembly.
- (5) Take out 2 screws (D), 1 screw (E) and 1 screw (F) as shown in Fig. 1-4-1.
- (6) Remove the Main board and Mechanism assemblies together while holding the edge of the Main board assembly. At this stage be careful of the power cord and prongs of the jacks on the back side. (Refer to Fig. 1-4-2.)
- (7) Remove the SW/Display board assembly and REC safety board assembly. (Refer to page 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD. Take care not to pull the flat wires (Fig. D6) from CN7001, CN7191 and CN7192.)

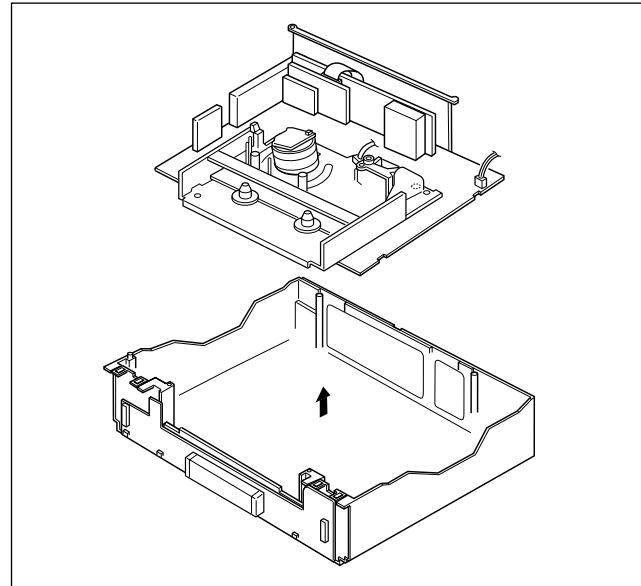


Fig. 1-4-2

- (8) Place the SW/Display board assembly and REC safety board assembly on the front side of the Mechanism and Main board assemblies which was removed at the step (6), then connect the flat wires into CN3011, CN901 and CN902 of the Main board assembly. (Refer to Fig. 1-4-3.)

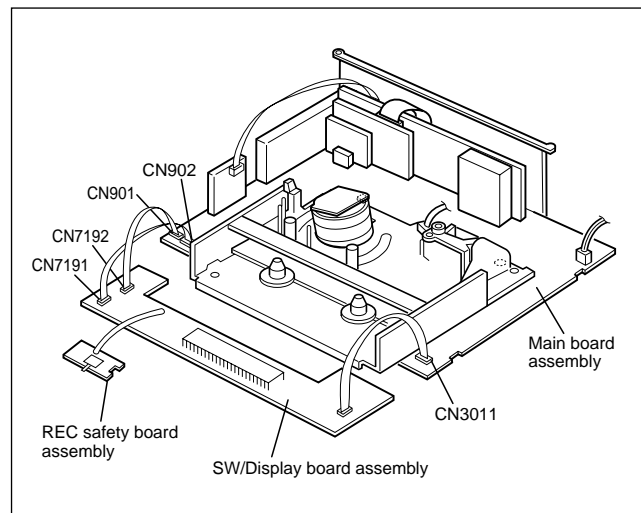


Fig. 1-4-3

- (9) Connect the power cord to the wall socket, and lift the cassette holder.
(Before turning on the power make sure that there is nothing which may produce a short circuit, such as faulty soldering.)

Note:

- **When carrying out diagnosis and repair of the Main board assembly in the service position, be sure to ground both the Main board and the Mechanism assemblies.**

If they are improperly grounded, there may be noise on the playback picture or the FDP counter display may move even when the mechanism is kept in an inoperative status.

1.4.2 Precautions for cassette loading in the "SERVICE POSITION"

The REC safety board assembly detects cassette loading as well as cassette tabs. Therefore, after the assembly has been removed in the "SERVICE POSITION", it is required to set the switch manually on the REC safety board assembly when a cassette is loaded.

1.4.3 Cassette loading and ejection methods in the "SERVICE POSITION"(See Fig. 1-4-3).

- (1) Insert a cassette halfway in the Cassette holder assembly.
- (2) Set the switch on the REC safety board assembly to ON (by pressing the switch).
- (3) As soon as the cassette starts to be loaded, set the switch on the REC safety board assembly to OFF (by releasing the switch).
- (4) Now the desired operation (recording, playback, fast forward, rewind, etc.) is possible in this status (the status shown in Fig.1-4-3).

Notes:

- **When performing diagnostics of the tape playback or the recording condition in the "SERVICE POSITION", enter the desired mode before turning the set upside down, and do not change the mode when performing diagnostics while the set is placed upside down. If you want to switch the mode, turn the set to the normal position (the status shown in Fig.1-4-3).**

- **In the "SERVICE POSITION", the cassette tabs cannot be detected and recording becomes possible even with a cassette with broken tabs such as the alignment tape. Be very careful not to erase important tapes.**

- (5) The switch on the REC safety board assembly does not have to be operated when ejecting a tape. But be sure to turn the set to the normal position before ejecting the tape.

1.5 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.5.1 How to set the "MECHANISM SERVICE MODE"

- (1) Disconnect VCR from AC.
- (2) Connect TPGND and TP7001 (TEST) on the SW/Display board assembly with a jump wire.
- (3) Connect VCR to AC.
- (4) Press the POWER button.
- (5) With lock levers(A)(B) on the left and right of the Cassette holder assembly pulled toward the front, slide the holder in the same direction as the cassette insertion direction. (For the positions of lock levers(A)(B), refer to the "Procedures for Lowering the Cassette holder assembly" on page 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
- (6) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.

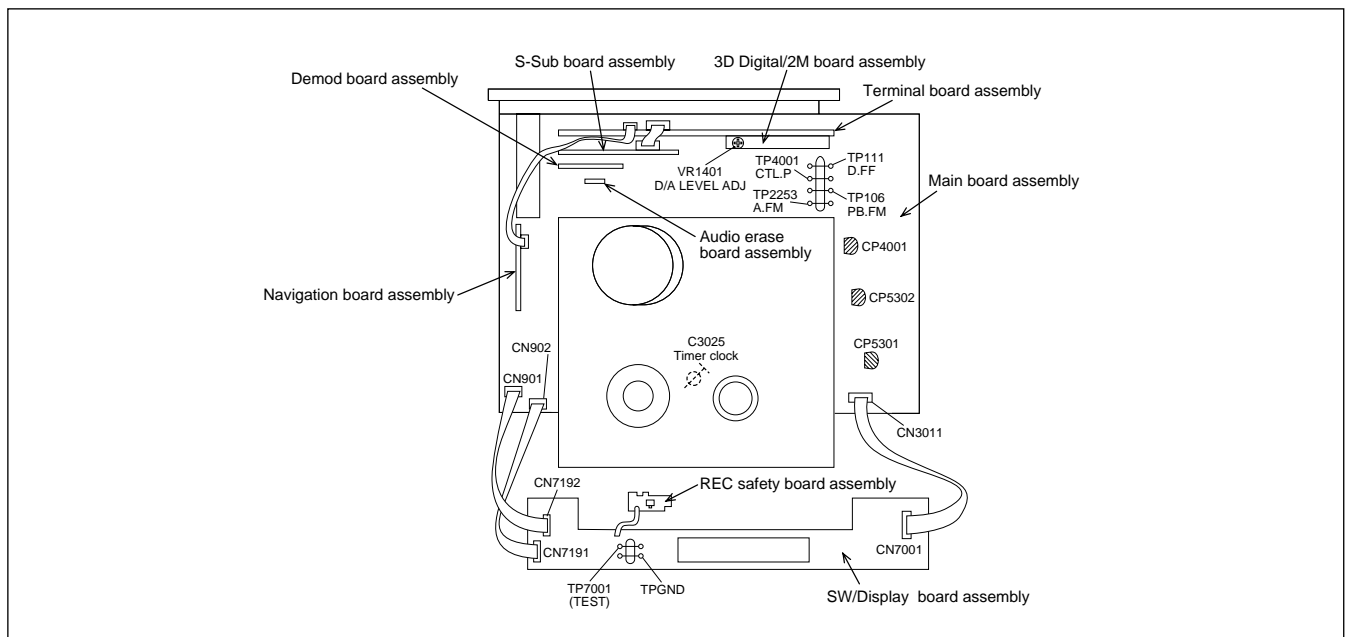
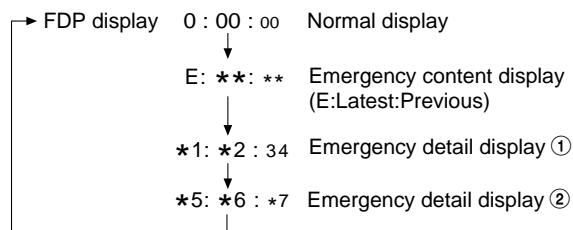


Fig. 1-5-1

1.6 EMERGENCY DISPLAY FUNCTION

This unit has a function for storing the history of the past two emergencies (EMG) and displaying them on each FDP. With the status of the VCR and mechanism at the moment an emergency occurred can also be confirmed.

FDP display switching



Notes:

- **The emergency detail display ①② show the information on the latest emergency.**
It becomes “--:--:--” when there is no latest emergency record.
- **When using the Jig RCU, set its custom code to match the custom code of the VCR.**

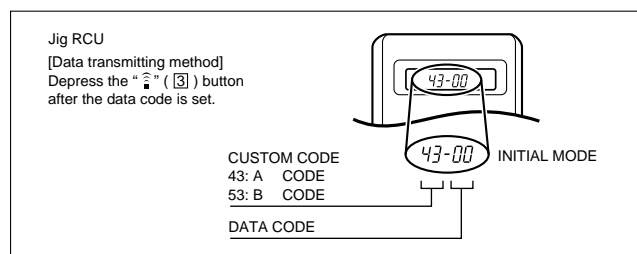
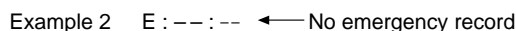
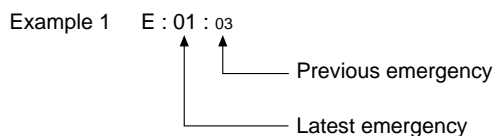


Fig. 1-6-1 Jig RCU [PTU94023B]

1.6.1 Displaying the emergency information

- (1) Transmit the code “59” from the Jig RCU.
The FDP shows the emergency content in the form of “E: *: *: *”.



Note:

- **For the emergency content, see “1.6.3 Emergency content description”.**

- (2) Transmit the code “59” from the Jig RCU again.
The FDP shows the emergency detail information ① in the form of “*1: *2: 34”.

- *1 : Deck operation mode at the moment of emergency
- *2 : Mechanism operation mode at the moment of emergency
- 3- : Mechanism sensor information at the moment of emergency
- 4 : Mechanism mode position at the moment of emergency

Note:

- **For the emergency detail information ①, see “1.6.4 Emergency detail information ①”.**

- (3) Transmit the code “59” from the Jig RCU once again.
The FDP shows the emergency detail information ② in the form of “*5: *6: *7”.

- *5 : Type of the cassette tape in use ①.
- *6 : Winding position of the cassette tape in use
- *7 : Type of the cassette tape in use ②(Winding area)

Note:

- **For the emergency detail information ②, see “1.6.5 Emergency detail information ②”.**

- (4) Transmit the code “59” from the Jig RCU once again to reset the display.

1.6.2 Clearing the emergency history

- (1) Display the emergency history.
- (2) Transmit the code “36” from the Jig RCU.
- (3) Reset the emergency display.

1.6.3 Emergency content description

Note: *Emergency contents “E08/E09” are for the model with Dynamic Drum (DD).*

FDP	CONTENT	CAUSE
E01: Loading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the loading direction, [E:01] is identified and the power is turned off.	<ol style="list-style-type: none"> ① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the loading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	<ol style="list-style-type: none"> ① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the unloading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E03: Take Up Reel Pulse EMG	When the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the reel EMG is not detected in STILL/SLOW modes.	<ol style="list-style-type: none"> ① The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; <ol style="list-style-type: none"> 1) The idler gear is not meshed with the take-up reel gear; 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The take-up reel sensor does not output the FG pulse. ② The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; <ol style="list-style-type: none"> 1) The idler gear is not meshed with the supply reel gear. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The supply reel sensor does not output the FG pulse. ③ Power is not supplied to the reel sensors.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	<ol style="list-style-type: none"> ① The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; <ol style="list-style-type: none"> 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. ② The drum FG pulse did not reach the System controller CPU because; <ol style="list-style-type: none"> 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. ③ The drum control voltage (DRUM CTL V) is not supplied to the MDA. ④ Power is not supplied to the drum MDA.
E05: Cassette Eject EMG	When the eject operation does not complete in 3 seconds after the start, [E:05] is identified, the pinch rollers are turned off and stopped, and the power is turned off. When the cassette insertion operation does not complete in 3 seconds after the start, the cassette is ejected. In addition, when the operation does not complete within 3 seconds after the start, [E:05] is also identified and the power is turned off immediately.	<ol style="list-style-type: none"> ① The cassette cannot be ejected due to a failure in the drive mechanism of the housing. ② When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. ③ The sensor/switch for detecting the end of ejection are not functioning normally. ④ The loading motor drive voltage is lower than specified or power is not supplied to the motor (MDA). ⑤ When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the capstan EMG is not detected in STILL/SLOW/FF/REW modes.	<ol style="list-style-type: none"> ① The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; <ol style="list-style-type: none"> 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). ② The capstan FG pulse did not reach the System controller CPU because; <ol style="list-style-type: none"> 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. ③ The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. ④ Power is not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	<ol style="list-style-type: none"> ① The SW 5 V power supply circuit is shorted with GND. ② The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	<ol style="list-style-type: none"> ① The absolute value sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. ④ The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	<ol style="list-style-type: none"> ① The FG sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. ④ The power to the sensor is not supplied. (Connection failure/soldering failure) ⑤ The FG pulse is not sent to the System Controller CPU. ⑥ The tilt motor is defective. (The soldered parts have separated.) ⑦ The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) ⑧ The tilt motor drive MDA - IC is defective. ⑨ Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). However, note that the reel EMG is not detected in the SLOW/STILL mode.	<ol style="list-style-type: none"> ① The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; <ol style="list-style-type: none"> 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The FG pulse output from the supply reel sensor is absent. ② The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). <ol style="list-style-type: none"> 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The FG pulse output from the take-up reel sensor is absent. ③ The power to a reel sensor is not supplied.
EC1 or EU1: Head clog warning	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:C1] or [E:U1] is identified and recorded in the emergency history. During the period in which a head clog is detected, the FDP and OSD repeat the “3-second warning display” and “7-second noise picture display” alternately. EMG code : “E:C1” or “E:U1” / FDP : “U:01” / OSD : “Try cleaning tape.” or “Use cleaning cassette.” The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-6-1

1.6.4 Emergency detail information ①

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest emergency can be confirmed based on the figure in EMG detail information ①.

[FDP display]

* 1 : * 2 : 3 4

- * 1 : Deck operation mode at the moment of emergency
- * 2 : Mechanism operation mode at the moment of emergency
- 3 - : Mechanism sensor information at the moment of emergency
- 4 : Mechanism mode position at the moment of emergency

Note:

- ***In the Deck operation mode/Mechanism operation mode/Mechanism mode position, the contents of the code that is shown on the FDP differs depending on the parts number of the System Control microprocessor (IC3001) of the VCR.***

For the microprocessor parts number that starts with the two letters "MN", refer to the Table of MN and for parts number with "HD", refer to the Table of HD.

* 1 : Deck Operation Mode

[Table of MN]

Display	Deck Operation Mode
00	Mechanism being initialized
01	STOP with pinch roller pressure off (or tape present with P.OFF)
02	STOP with pinch roller pressure on
03	POWER OFF as a result of EMG
04	PLAY
0C	REC
10	Cassette ejected
20	FF
21	Tape fully loaded, START sensor ON, short FF
22	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	FWD SEARCH (variable speed) including x2-speed
2C	INSERT REC
40	REW
42	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	REV SEARCH (variable speed)
4C	AUDIO DUB
6C	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8C	REC PAUSE
8D	Back spacing
8E	Forward spacing (FWD transport mode with BEST function)
AC	INSERT REC PAUSE
AD	INSERT REC Back spacing
CC	AUDIO DUB PAUSE
CD	AUDIO DUB Back spacing
EC	INSERT REC (VIDEO + AUDIO) PAUSE
ED	INSERT REC (VIDEO + AUDIO) Back spacing

[Table of HD]

Display	Deck Operation Mode
00	STOP with pinch roller pressure off (or tape present with P.OFF)
01	STOP with pinch roller pressure on
04	PLAY
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH (variable speed)
4C	AUDIO DUB
6E	INSERT REC (VIDEO+AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO+AUDIO) PAUSE

* 2 : Mechanism Operation Mode

[Table of MN]

Display	Mechanism Operation Mode
00	Command standby (Status without executing command)
02	POWER OFF by EMG occurrence
04	Moving to the adjacent position in the LOAD direction
06	Moving to the adjacent position in the UNLOAD direction
08	Cassette ejection being executed
0A	Cassette insertion being executed
0C	Tape being loaded
0E	Tape being unloaded
10	Mode transition to STOP with pinch roller compression ON
12	Mode transition to STOP with pinch roller compression OFF
14	Mode transition to STOP with pinch roller compression OFF as a result of POWER OFF
16	Mode transition to STOP with pinch roller compression ON as a result of POWER ON
18	Mode transition to PLAY
1A	Mode transition to FWD SEARCH
1C	Mode transition to REC
1E	Mode transition to FWD STILL/SLOW
20	Mode transition to REV STILL/SLOW
22	Mode transition to REV SEARCH
24	Mode transition from FF/REW to STOP
26	Mode transition to FF
28	Mode transition to REW
2A	4 sec. of REV as a result of END sensor going ON during loading
2C	Short FF/REV as a result of tape sensor going ON during unloading
2E	Mechanism position being corrected due to overrun
80	Mechanism in initial position (Dummy command)

[Table of HD]

Display	Mechanism Operation Mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC, etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)

3- : Mechanism Sensor Information

[Common table of MN and HD]

Display	Mechanism Sensor Information			
	S-VHS SW	REC SAFETY SW	START SENSOR	END SENSOR
0-	VHS	Tab broken	ON	ON
1-	VHS	Tab broken	ON	OFF
2-	VHS	Tab broken	OFF	ON
3-	VHS	Tab broken	OFF	OFF
4-	VHS	Tab present	ON	ON
5-	VHS	Tab present	ON	OFF
6-	VHS	Tab present	OFF	ON
7-	VHS	Tab present	OFF	OFF
8-	S-VHS	Tab broken	ON	ON
9-	S-VHS	Tab broken	ON	OFF
A-	S-VHS	Tab broken	OFF	ON
B-	S-VHS	Tab broken	OFF	OFF
C-	S-VHS	Tab present	ON	ON
D-	S-VHS	Tab present	ON	OFF
E-	S-VHS	Tab present	OFF	ON
F-	S-VHS	Tab present	OFF	OFF

- 4 : Mechanism Mode Position

[Table of MN]

Display	Mechanism Mode Position
-0	Initial value
-1	EJECT position
-2	Housing operating
-3	U/L STOP position
-4	Tape being loaded/unloaded (When the pole base is located on the front side of the position just beside the drum)
-5	Tape being loaded/unloaded (When the pole base is located on the rear side of the position just beside the drum)
-6	Pole base compressed position
-7	FF/REW position
-8	Between FF/REW and STOP with pinch roller compression ON
-9	STOP with pinch roller compression OFF
-A	Between STOP with pinch roller compression OFF and REV
-B	REV (REV STILL/SLOW) position
-C	Between REV and FWD
-D	FWD (FWD STILL/SLOW) position
-E	Between FWD and PLAY
-F	PLAY position

[Table of HD]

Display	Mechanism Mode Position
-0	EJECT position
-1	U/L STOP position
-2	Tape being loaded/unloaded (When the pole base is located on the rear side of the position just beside the drum)
-3	FF/REW position
-4	STOP with pinch roller pressure off
-5	REV (REV STILL/SLOW) position
-6	FWD (FWD STILL/SLOW) position, PLAY position
-7	Intermediate position during transition between other mechanism modes

Note:

- As the display is always “-7” at any intermediate position between mechanism modes, the position of transitory EMG may sometimes not be locatable.

1.6.5 Emergency detail information ②

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information ②.

[FDP display]

*5 : *6 : *7

*5 : Type of the cassette tape in use ①

*6 : Winding position of the cassette tape in use

*7 : Type of the cassette tape in use ② (Winding area)

Note:

- EMG detail information ② is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.

*5 : Cassette tape type ①

Display	Cassette Tape Type ①
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- Cassette tape type ① is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.
- If other value than those listed in the above table is displayed, the cassette tape type is not identified.

*6 : Cassette tape winding position

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 22 sections using a hex number from “00” to “15”.

“00” : End of winding

“15” : Beginning of winding

“FF” : Tape position not identified

*7 : Cassette tape type ② (Winding area)

Display	Cassette Tape Type ②
00	Cassette type not identified
07	Small reel, thick tape T-5
08 - 0E	C cassette, thick tape TC-10
09 - 15	C cassette, thick tape TC-20P
0A - 0B	Small reel, thick tape T-20
0A - 16	C cassette, thin tape TC-30
0A - 16	C cassette, thin tape TC-40
0D - 0F	Small reel, thick tape T-40
11 - 14	Small reel, thick tape T-60
15 - 18	Small reel, thick tape T-80/DF-160
17 - 1A	Small reel, thick tape T-80/DF-180
19 - 1D	Small reel, thick tape T-100
1D - 21	Small reel, thick tape T-120/DF-240
1E - 1F	Small reel, thin tape T-140
1F - 23	Small reel, thick tape T-130
21 - 23	Small reel, thin tape T-160
21 - 23	Small reel, thin tape T-168
22 - 24	Small reel, thick tape DF-300
22 - 24	Small reel, thin tape T-180/DF-380
22 - 24	Small reel, thin tape T-210/DF-420
22 - 23	Large reel T-5
23 - 24	Large reel T-10
25 - 26	Large reel T-20
27 - 29	Large reel T-30
29 - 2B	Large reel T-40
2D - 2F	Large reel T-60

Note:

- The values of cassette tape type ② in the above table are typical values with representative cassette tapes.

1.7 SERVICING THE VIDEO NAVIGATION FUNCTION

The video navigation function is to record data to the built-in FLASH memory of the VCR. At the same time a reference number is wrote on the cassette tape for control purposes. Therefore, the FLASH memory and the cassette tape (self-recorded tape) form a related pair. If the FLASH memory or the board assembly (in which the FLASH memory is included) is replaced, the video navigation function will not operate. In this case, it is required to copy the video navigation data in the original FLASH memory into the FLASH memory of the unit which the navigation function is available.

1.7.1 Copying the video navigation data

Notes:

- **When copying the video navigation data, initialization of the FLASH memory of the master unit is required.**
 - **Connect the JLIP cable to each "JLIP terminal" of the VCR.**
- JLIP Cable (Parts No. : QAM0129-001 or PEAC0453)**

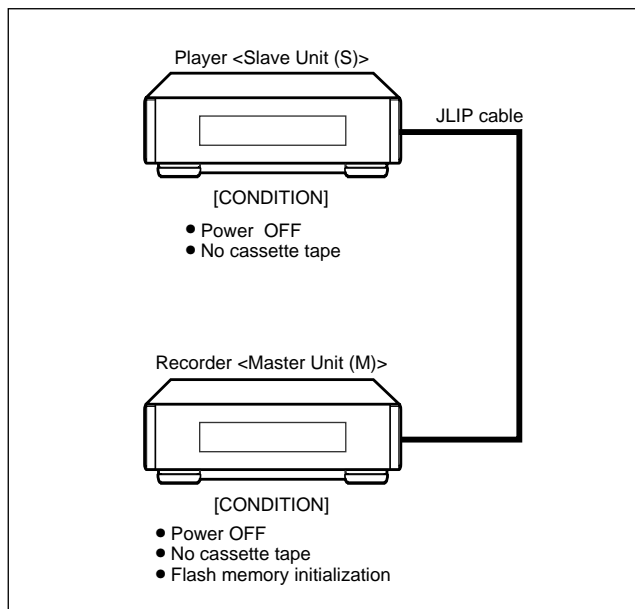


Fig. 1-7-1a Connection diagram

- (1) Turn [OFF] the power of the 2 units (slave and master) VCR and set it without a cassette tape.
- (2) Press the [PLAY] button of the slave unit for 7 seconds. When the copy mode is set, [1] will be displayed on the FDP.

FDP : (S)

Note:

- **To cancel the copy mode, press the [PLAY] button of the slave unit, then the copy mode of the slave unit will be cancelled.**

- (3) Press the [PAUSE] button of the master unit for 7 seconds. When the copy mode is set, [2] will be displayed on the FDP.

FDP : (M)

Note:

- **To cancel the copy mode, press the [PAUSE] button of the master unit, then the copy mode of the master unit will be cancelled.**

- (4) Press the [STOP] button of the master unit. When copying is started, [3] will be displayed on the FDP and when copying is completed the FDP display changes from [3] to [4].

When an error occurs during the copying process, [5] will be displayed on the FDP. During such an occurrence the slave unit FDP display is [1].

FDP : (S)

FDP : (M)

(M) <Completed>
 FDP : (M)
 (M) <Error>
 FDP : (M)

- (5) Press the [STOP] button of the master unit. The copy mode of the master and slave unit will be cancelled simultaneously.

1.7.2 Erasing the video navigation data (Initialization)

This is the service mode to erase all the video navigation data inside the FLASH memory. When a unit is replaced or after an operations check, erase the data which is not required while observing the TV screen.

Notes:

- During Flash memory initialization, the transmission of the jig code may affect the peripheral VCR. Therefore, when initializing the Flash memory, be sure to unplug the peripheral VCR power cable.
- Please take note that after erasing data cannot be re-stored, therefore care must be exercised.
- When using the Jig RCU, set its custom code to match the custom code of the VCR.

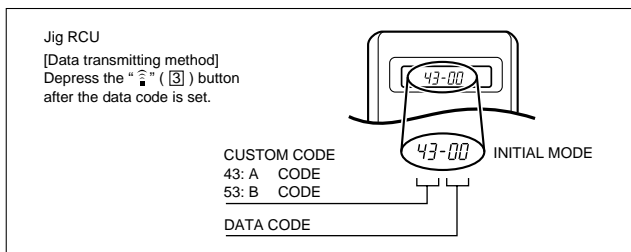


Fig. 1-7-2a Jig RCU [PTU94023B]

- (1) Turn ON the power.
- (2) Transmit the code "7F" from the Jig RCU.
- (3) Transmit the code "FC" from the Jig RCU. Then the [FLASH MEMORY UTILITIES] screen is displayed. (See Fig. 1-7-2c.)
- (4) Transmit the code "21" from the Jig RCU. Select [1. ERASE], then ERASE starts. During erase [PLEASE WAIT] is displayed and when erase is completed [ERASED] will be displayed. (See Fig. 1-7-2d and Fig. 1-7-2e.)
- (5) Transmit the code "23" from the Jig RCU, then the mode is cancelled. (See Fig. 1-7-2b.)

Fig. 1-7-2b

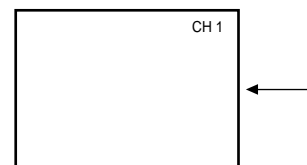


Fig. 1-7-2c

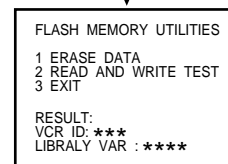


Fig. 1-7-2d

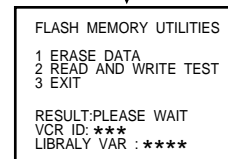
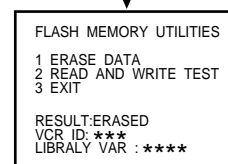


Fig. 1-7-2e



1.7.3 Factory setting level during shipment

After shipment from the factory, this is the service mode to return the rewritten EEPROM data to the factory setting level [Factory reset].

Note:

- When this operation is executed, all user's setting contents will return to the factory setting level, therefore care must be exercised.

- (1) Insert a cassette tape.
- (2) Transmit the code "6F" from the Jig RCU.
- (3) After a setting is completed, the cassette tape is automatically ejected.

SECTION 2

MECHANISM ADJUSTMENT

2.1 BEFORE STARTING REPAIR AND ADJUSTMENT

2.1.1 Precautions

- (1) Unplug the power cable of the main unit before using your soldering iron.
- (2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
- (3) Do not randomly handle the parts without identifying where the trouble is.
- (4) Exercise enough care not to damage the lugs, etc. during the repair work.
- (5) When installing the front panel assembly, be sure to hook the lug on the back side of the cassette door to the door opener of the cassette holder. If this operation is neglected it will not be possible to remove the cassette when ejecting because the housing door cannot be opened.

2.1.2 Checking for Proper Mechanical Operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See 1.5 MECHANISM SERVICE MODE.)

2.1.3 Manually Removing the Cassette Tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

- (1) Unplug the power cable and remove the top cover, bracket and front panel assembly. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
- (2) Unload the cassette by manually turning the loading motor of the mechanism assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-3a.)
- (3) Bring the pole base assembly (supply or take-up side) to a pause when it reaches the position where it is hidden behind the cassette tape.
- (4) Move the top guide toward the drum while holding down the lug **A** of the bracket retaining the top guide. Likewise hold part **B** down and remove the top guide. Section **C** of the top guide is then brought under the cassette lid. Then remove the top guide by pressing the whole cassette tape down. (See Fig.2-1-3b.)
- (5) Remove the cassette tape by holding both the slackened tape and the cassette lid.
- (6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

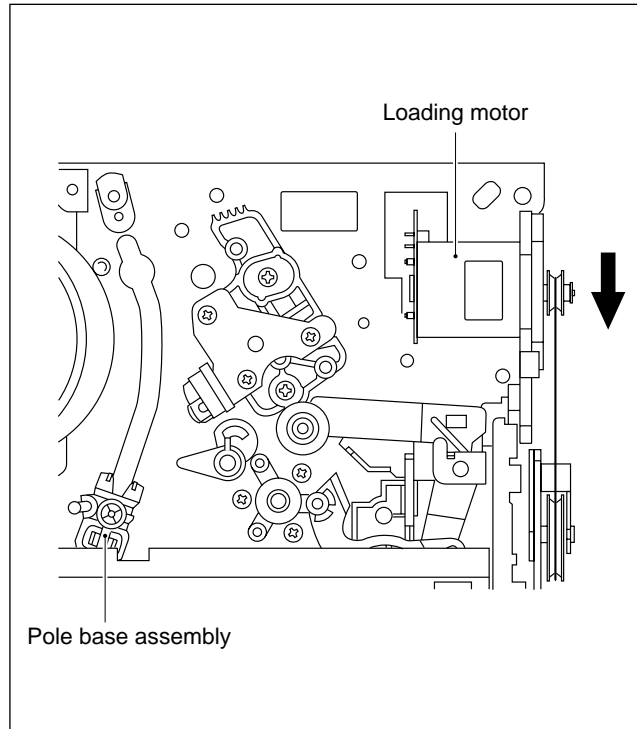


Fig. 2-1-3a

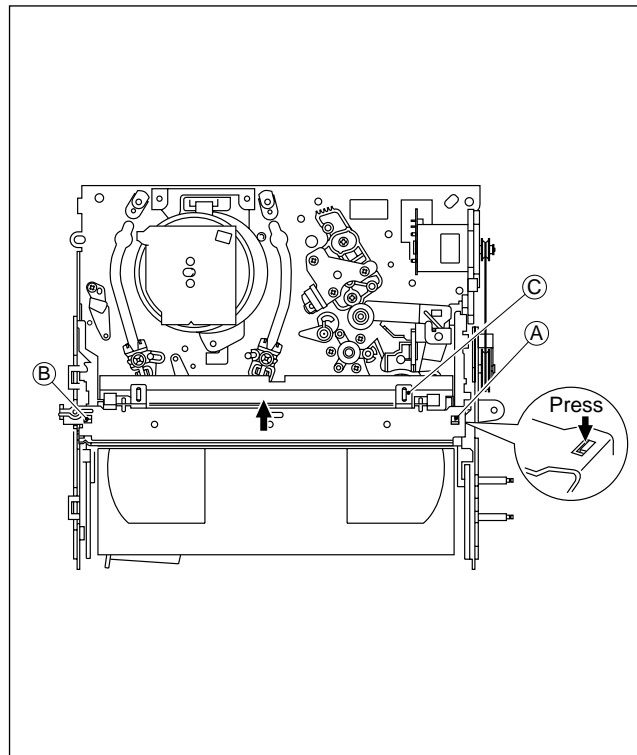


Fig. 2-1-3b

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

- (1) Unplug the power cable and remove the top cover, front panel assembly and others so that the mechanism assembly is visible. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
- (2) While keeping the tension arm assembly of the mechanism assembly free from tension, pull the tape on the pole base assembly (supply or take-up side) out of the guide roller. (See Fig.2-1-3c.)
- (3) Take the spring of the pinch roller arm assembly off the hook of the press lever assembly, and detach it from the tape. (See Fig.2-1-3d.)
- (4) In the same way as in the electrical failure instructions in 2.1.3-1(4), remove the top guide.
- (5) Raise the cassette tape cover. By keeping it in that position, draw out the cassette tape case from the cassette holder and take out the tape.
- (6) By hanging the pinch roller arm assembly spring back on the hook, take up the slack of the tape into the cassette.

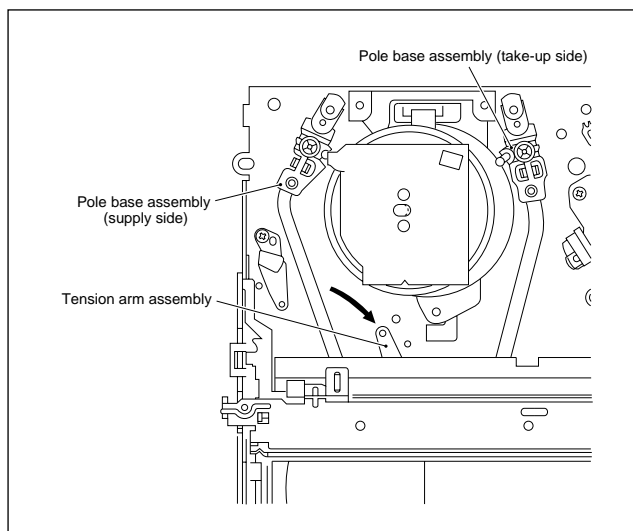


Fig. 2-1-3c

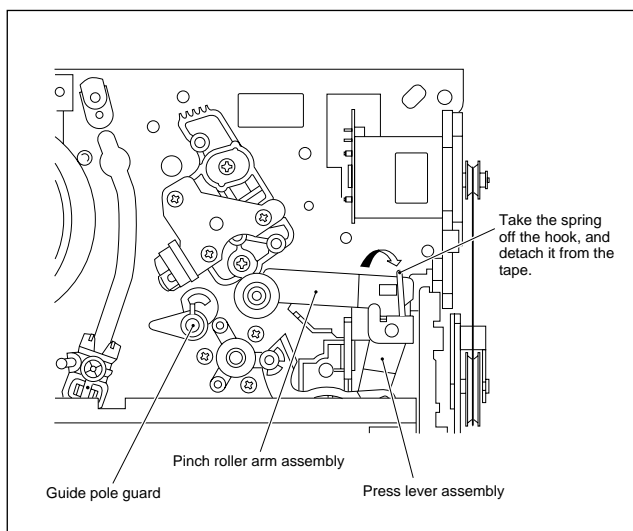
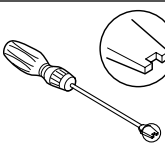

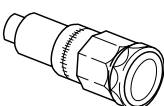
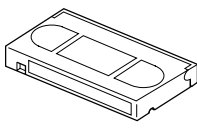
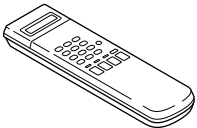
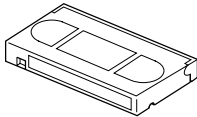
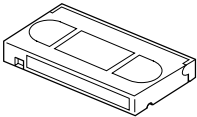


Fig. 2-1-3d

2.1.4 Jigs and Tools Required for Adjustment

Roller driver PTU94002	A/C head positioning tool PTU94010	Torque gauge PUJ48075-2
		
Back tension cassette gauge PUJ48076-2	Jig RCU PTU94023B	
		
Alignment tape (SP, staircase, PAL) MHPE	Alignment tape (LP, staircase, PAL) MHPE-L	
		

2.1.5 Maintenance and Inspection

1. Location of major mechanical parts

In this chapter, the two mechanism speeds are described by comparing the speeds of the standard type and the high-speed FF/REW type.

It is possible to distinguish between these two types of mechanism by the diameters of their capstan pulleys.

The capstan pulley diameter for the standard type is approx. 32 mm.

The capstan pulley diameter for the high-speed FF/REW type is approx. 43 mm.

For information on the different parts used in the two mechanism types, please refer to the "Replacement of major parts".

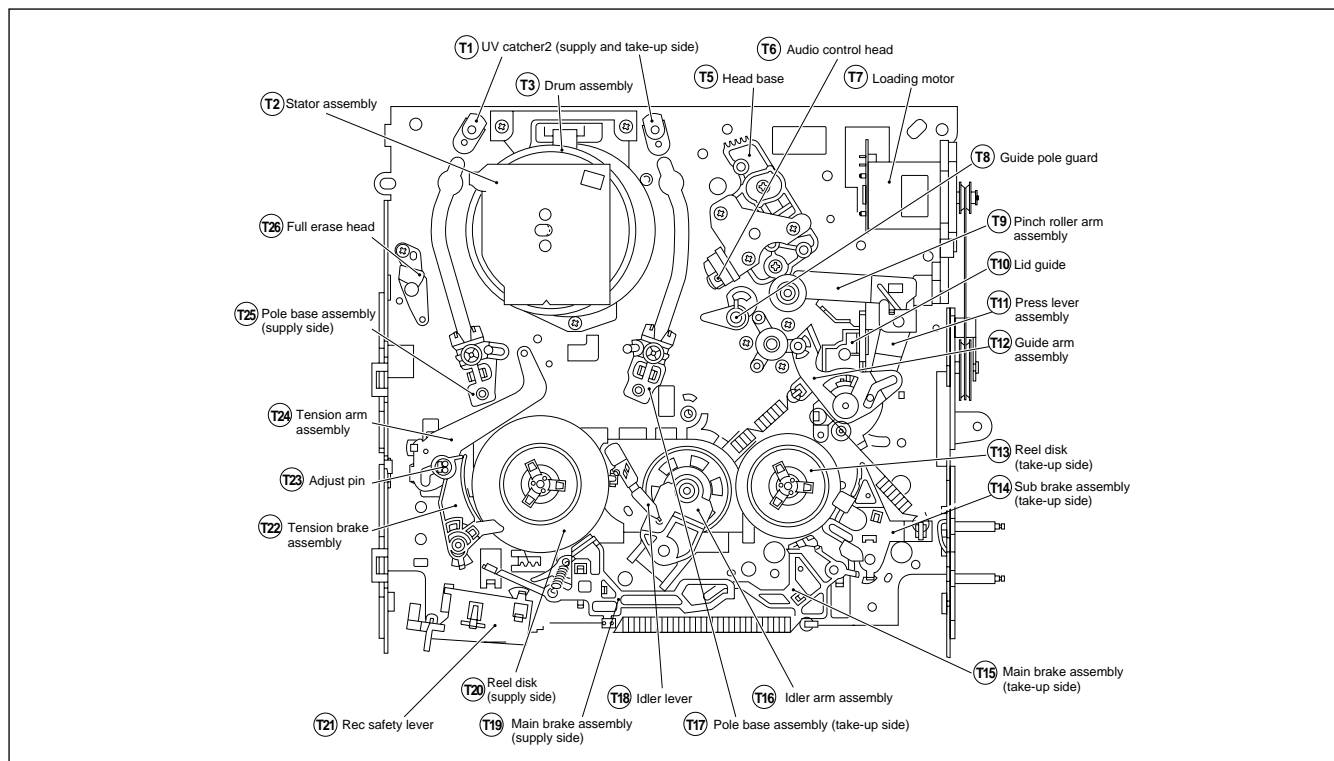


Fig. 2-1-5a Mechanism assembly top side

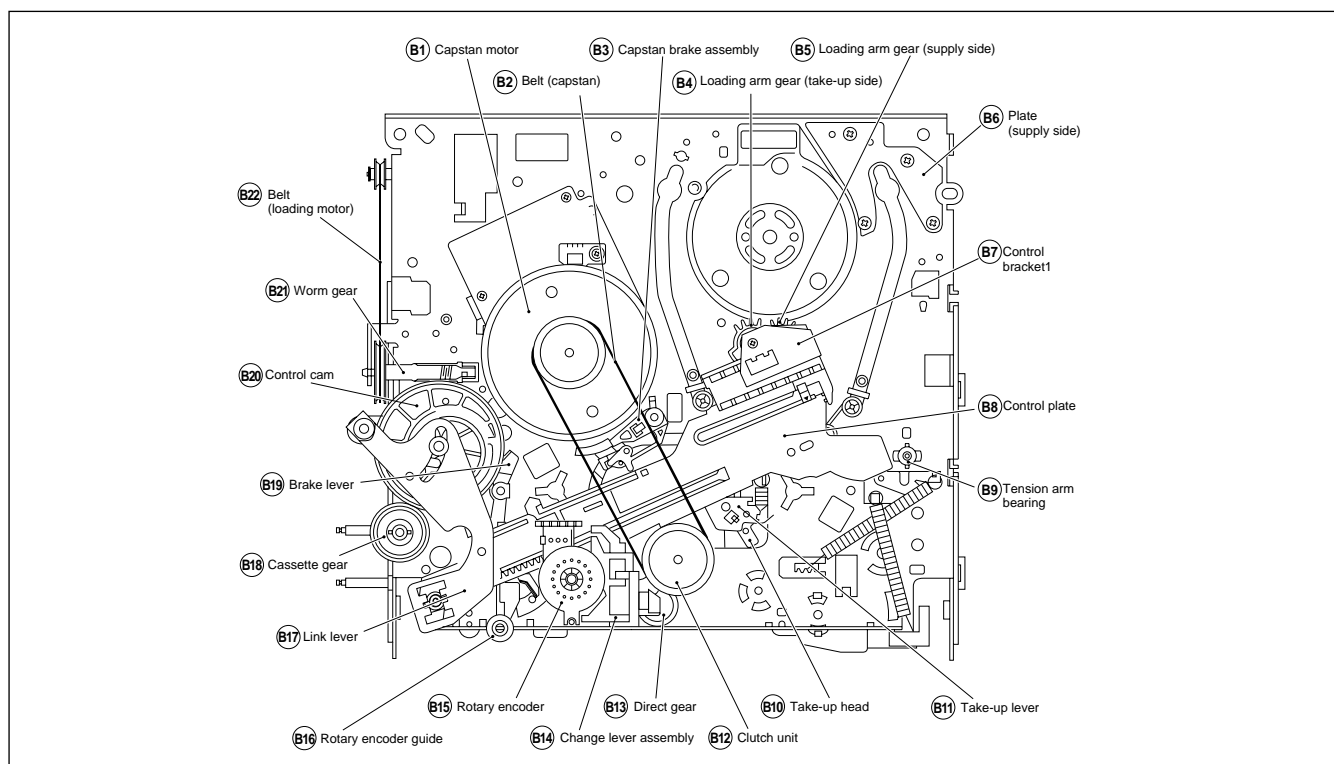


Fig. 2-1-5b Mechanism assembly bottom side

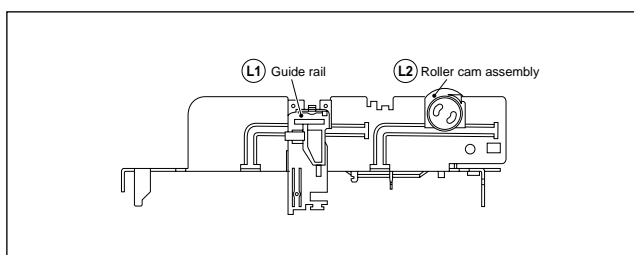


Fig. 2-1-5c Mechanism assembly left side

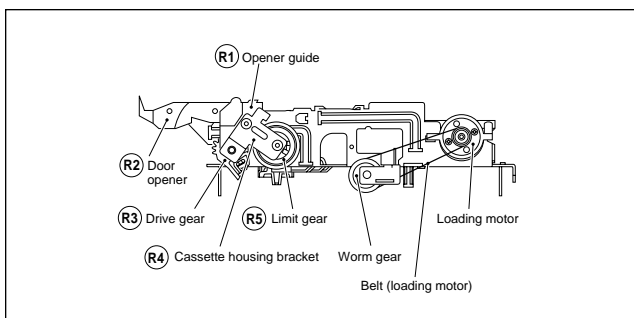


Fig. 2-1-5d Mechanism assembly right side

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

- (1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note:

- **Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.**

- (2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
- (3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- **See the “mechanism assembly” diagram of the parts list for the lubricating or greasing spots, and for the types of oil or grease to be used.**

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Capstan brake assembly		○
	Main brake assembly		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear		○
	Control plate		○
Other	Brush	★○	★○
	Tension brake assembly	○	○
	Rotary encoder		○

★ : Cleaning

○ : Inspection or Replacement if necessary

Table 2-1-5a

5. Disassembling procedure table

The following table indicates the order in which parts are removed for replacement. To replace parts, remove them in the order of 1 to 18 as shown in the table. To install them, reverse the removal sequence.

The symbols and numbers preceding the individual part names represent the numbers in the “Location of major mechanical parts” table. Also, the “T”, “B”, and “T/B” on the right of each part name shows that the particular part is removed from the front, from the back, and from both sides of the mechanism, respectively.

Symbols and numbers	Symbols and numbers		Front (T)/Back (B) of mechanism	Number of removal steps	L1	L2	R4	R1	—	—	R3	—	T9	T12	T11	T1	B15	B12	B14	B13	—	B17	B21	B7	B8	B5	B4	B11	T14	T15	T13	T22	T24	T18	B19
	(Reference items)	Removal parts																																	
L1	2.2.3	Guide rail	T	1																															
L2	2.2.3	Roller cam assembly	T	1																															
R4	2.2.3	Cassette housing bracket	T	1																															
R1	2.2.3	Opener guide	T	2			1																												
R2	2.2.3	Door opener	T	3			1	2																											
—	2.2.3	Relay gear	T	3			1	2																											
R5	2.2.3	Limit gear	T	3			1	2																											
—	2.2.3	Cassette holder assembly	T	6	1	2	3	4	5																										
R3	2.2.3	Drive gear	T	4			1	2	3																										
—	2.2.3	Drive arm	T	8	1	2	3	4	5	6	7																								
T9	2.2.4	Pinch roller arm assembly	T	1																															
T12	2.2.5	Guide arm assembly	T	1																															
T11	2.2.5	Press lever assembly	T	3									1	2																					
T6	2.2.6	Audio control head	T	1																															
T7	2.2.7	Loading motor	T	1																															
B1	2.2.8	Capstan motor	T/B	1																															
T1	2.2.9	UV catcher2	T	1																															
T17	2.2.9	Pole base assembly (take-up side)	T/B	2												1																			
T25	2.2.9	Pole base assembly (supply side)	T/B	2												1																			
B15	2.2.10	Rotary encoder	B	1																															
B12	2.2.11	Clutch unit	B	1																															
B14	2.2.12	Change lever assembly	B	3													1	2																	
B13	2.2.12	Direct gear	B	4													1	2	3																
—	2.2.12	Clutch gear	B	5													1	2	3	4															
—	2.2.12	Coupling gear (*2)	B	6													1	2	3	4	5														
B17	2.2.13	Link lever	B	1																															
B18	2.2.14	Cassette gear	B	2																		1													
B20	2.2.14	Control cam	B	2																		1													
B21	2.2.14	Worm gear	B	1																															
T10	-	Lid guide	T/B	5									1	2	3								4												
B7	2.2.15	Control bracket1	B	1																															
B8	2.2.15	Control plate	B	6													1	2	3			4		5											
B5	2.2.16	Loading arm gear (supply side)	B	7													1	2	3			4		5	6										
B4	2.2.16	Loading arm gear (take-up side)	B	8													1	2	3			4		5	6	7									
—	2.2.16	Loading arm gear shaft	B	9													1	2	3			4		5	6	7	8								
B11	2.2.17	Take-up lever	T/B	7													1	2	3			4		5	6										
B10	2.2.17	Take-up head	T/B	8													1	2	3			4		5	6			7							
—	2.2.17	Control plate guide	T/B	8													1	2	3			4		5	6			7							
B3	2.2.18	Capstan brake assembly	T/B	7													1	2	3			4		5	6										
T14	2.2.19	Sub brake assembly(take-up side)	T/B	15	1	2	3	4	5	6	7	8					9	10	11			12		13	14										
T15	2.2.20	Main brake assembly(take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T19	2.2.20	Main brake assembly(supply side)	T/B	9	1	2	3	4	5	6	7	8																							
T13	2.2.20	Reel disk (take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T22	2.2.21	Tension brake assembly	T/B	9	1	2	3	4	5	6	7	8																							
T20	2.2.21	Reel disk (supply side)	T/B	10	1	2	3	4	5	6	7	8																					9		
T24	2.2.21	Tension arm assembly	T/B	10	1	2	3	4	5	6	7	8																					9		
B9	2.2.21	Tension arm bearing	T/B	10	1	2	3	4	5	6	7	8																					9		
T18	2.2.22	Idler lever	T/B	17	1	2	3	4	5	6	7	8					9	10	11			12		13	14						15	16			
T16	2.2.22	Idler arm assembly	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14							15	16	17	
B19	-	Brake lever (*1)	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				
B16	-	Rotary encoder guide	T/B	19	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				18

Table 2-1-5b

Note:

- The parts with marked (*) have different types of mechanisms (standard type or high-speed FF/REW type).

* 1 : Uses the standard type mechanism only.

* 2 : Uses the high-speed FF/REW type mechanism only.

2.2 REPLACEMENT OF MAJOR PARTS

2.2.1 Before Starting Disassembling (Phase matching between mechanical parts)

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.

Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm gear, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.

Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as the drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another. (For information on phase matching of the mechanism, see the instructions on how to install individual parts.)

This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.

This mode is usually not in use, manually set it when it is required.

2.2.2 How to Set the Mechanism Assembling Mode

Remove the mechanism assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY.) Turn the worm gear toward the front so that the guide hole of the control cam is brought into alignment with the hole at the mechanism assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-2a.)

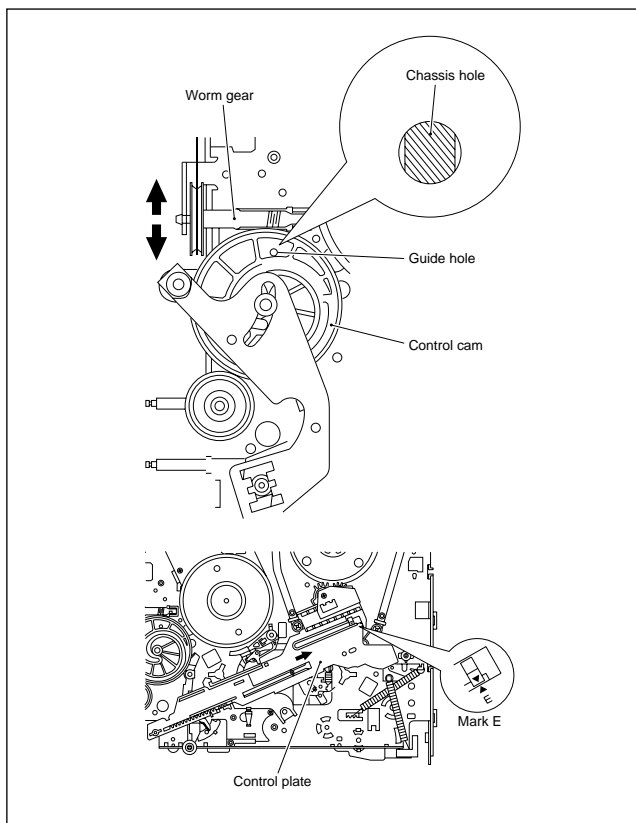


Fig. 2-2-2a

2.2.3 Cassette Holder Assembly

1. How to remove

- (1) Remove the guide rail and roller cam assembly. (See Fig.2-2-3a.)
(3 lugs on the guide rail and one lug on the roller cam assembly)

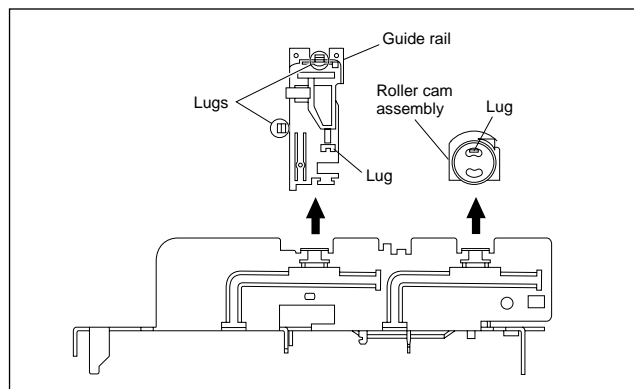


Fig. 2-2-3a

- (2) Remove the two slit washers and remove the cassette housing bracket. (See Fig.2-2-3b.)
- (3) Remove the opener guide, spring(A), door opener, relay gear and limit gear. (See Fig.2-2-3b.)

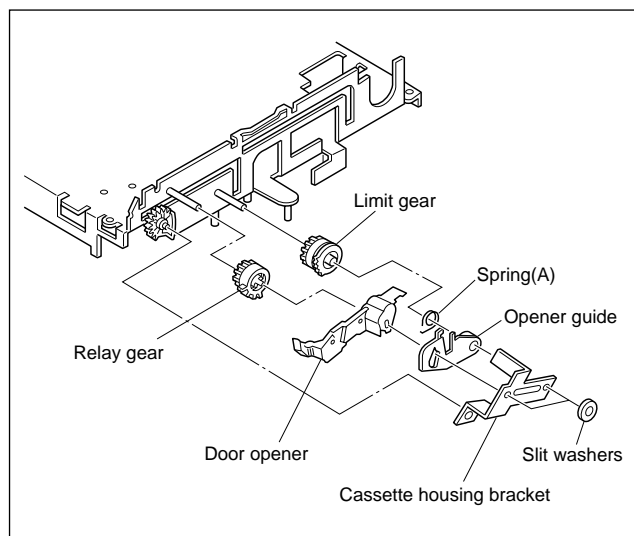


Fig. 2-2-3b

- (4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the roller cam assembly have been removed (so that the drive arm is upright). (See Fig.2-2-3c.)

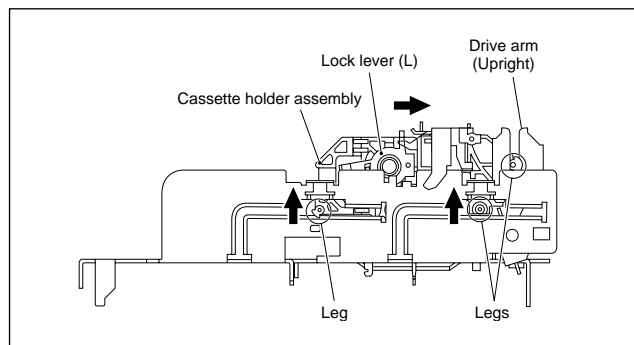


Fig. 2-2-3c

- (5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs (A) and (B) on the right side out of the rail and also pull up the leg (C). (See Fig.2-2-3d and Fig.2-2-3e.)
- (6) Draw out the drive gear, and remove the drive arm.

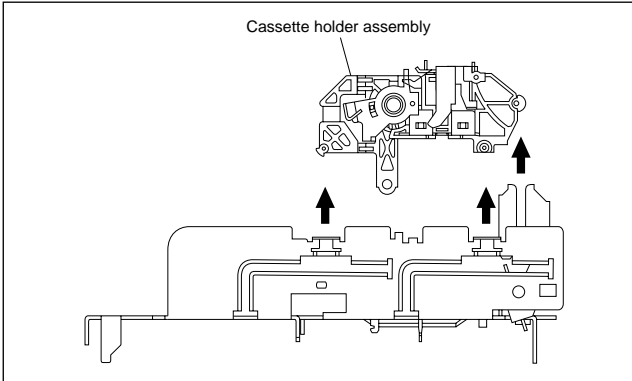


Fig. 2-2-3d

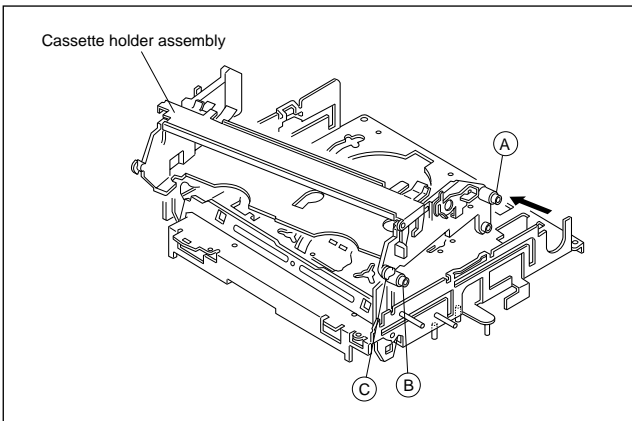


Fig. 2-2-3e

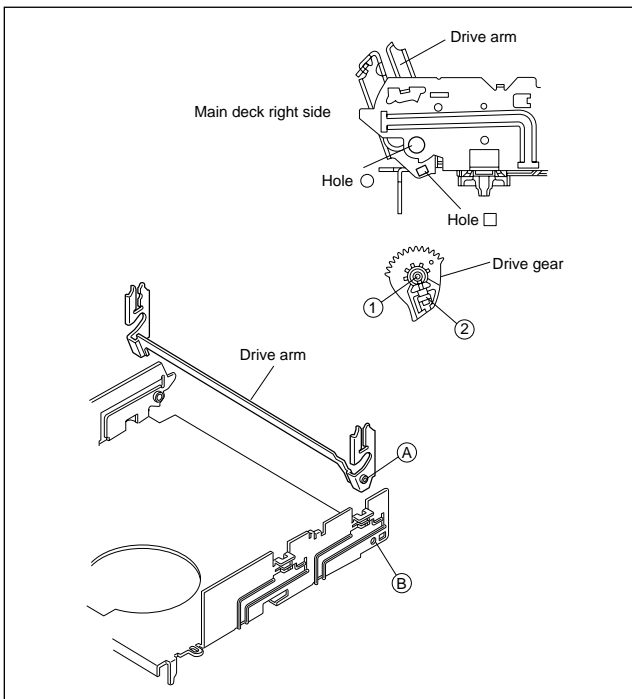


Fig. 2-2-3f

2. How to install (Phase matching)

- (1) Insert the section (A) of the drive arm into the section (B) of the main deck.
- (2) Insert the section (1) of the drive gear into the round hole, and the section (2) into the square hole on the drive arm. (See Fig.2-2-3f.)
- (3) Hold the drive arm upright and fit the leg (C) on the right side of the cassette holder assembly into the groove. (See Fig.2-2-3g.)
- (4) While swinging the lock lever (R) of the cassette holder assembly toward the front, put the legs (A) and (B) into the rail. (See Fig.2-2-3g.)
- (5) Drop the three legs on the left side of the cassette holder assembly into the groove at one time. (See Fig.2-2-3h.)
- (6) Slide the whole cassette holder assembly toward the front to bring it to the eject end position.
- (7) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the guide hole on the main deck. (See Fig.2-2-3i.)
- (8) Install so that the notch on the periphery of the relay gear is aligned with the notch of the main deck and that hole A of the relay gear is aligned with the hole A of the limit gear and that hole B of the relay gear is aligned with the hole B of the drive gear. (See Fig.2-2-3i.)
- (9) Install the door opener, opener guide, spring(A) and cassette housing bracket and fasten the two slit washers.

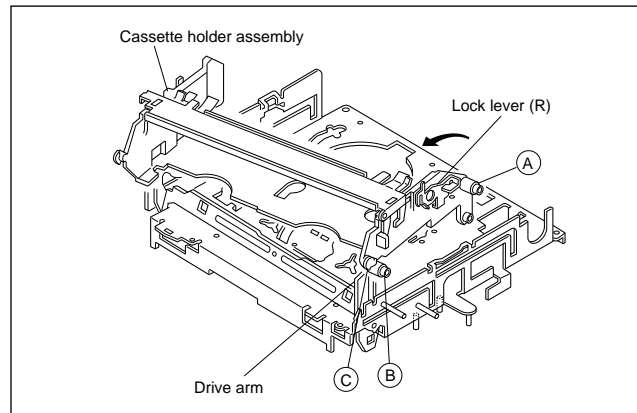


Fig. 2-2-3g

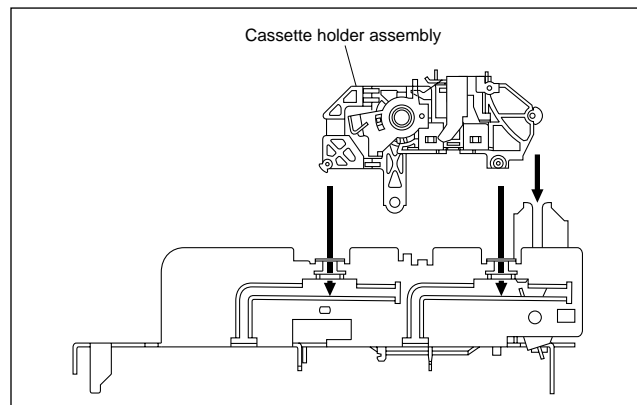


Fig. 2-2-3h

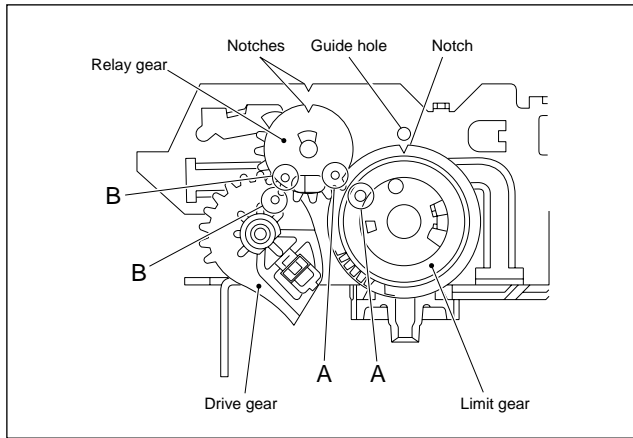


Fig. 2-2-3i

2.2.4 Pinch Roller Arm Assembly

1. How to remove

- (1) Remove the spring from the hook of the press lever assembly.
- (2) Remove the slit washer and remove the pinch roller seat 2. (See Fig.2-2-4a.)
- (3) Remove the pinch roller arm assembly by pulling it up.

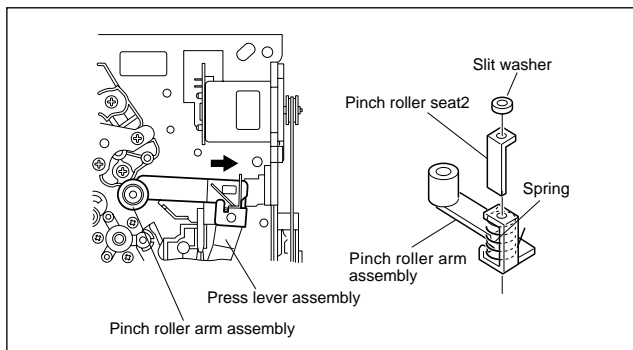


Fig. 2-2-4a

2.2.5 Guide Arm Assembly and Press Lever Assembly

1. How to remove

- (1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm assembly by pulling it up.
- (2) Remove the press lever assembly by pulling it up. (See Fig.2-2-5a.)

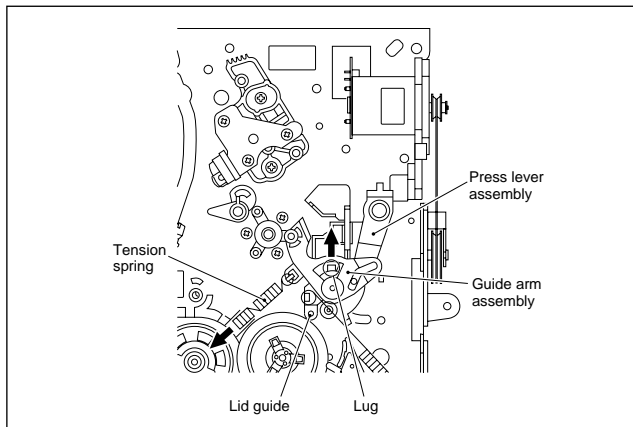


Fig. 2-2-5a

2.2.6 Audio Control Head

1. How to remove

- (1) Remove the two screws (A) and remove the audio control head together with the head base.
- (2) When replacing only the audio control head, remove the three screws (B) while controlling the compression spring.

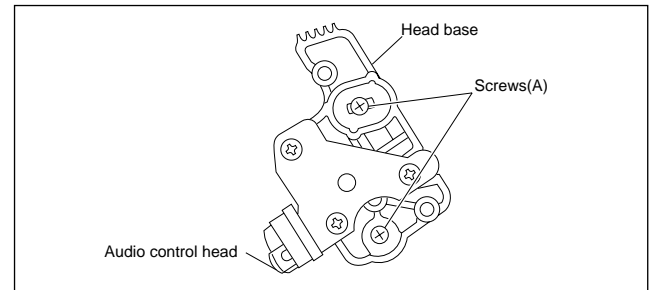


Fig. 2-2-6a

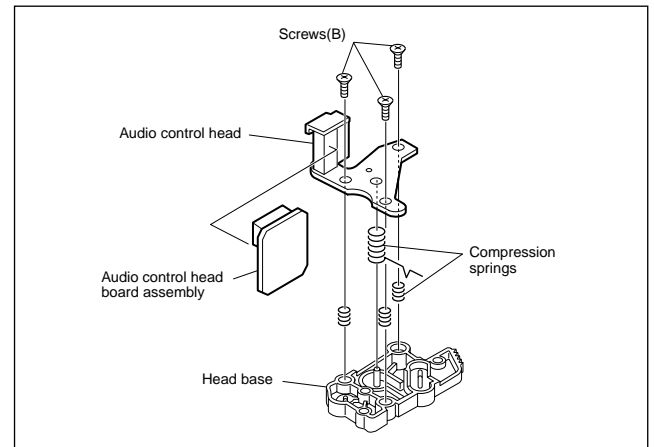


Fig. 2-2-6b

2. How to install

- (1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-6c. Also make sure that the screw center (centre) is brought into alignment with the center (centre) position of the slot.

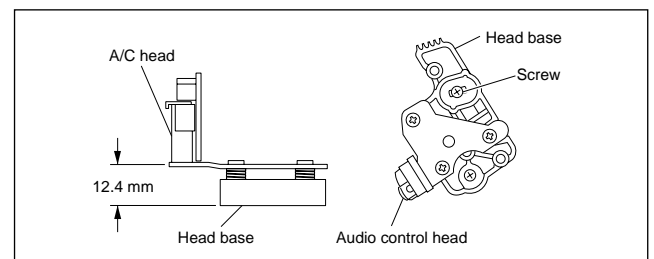


Fig. 2-2-6c

2.2.7 Loading Motor

1. How to remove

- (1) Remove the belt wound around the worm gear.
- (2) Open the two lugs of the motor guide and remove the loading motor, loading motor board assembly and motor guide altogether by pulling them up.
- (3) When replacing the loading motor board assembly, take care with the orientation of the loading motor. (Install so that the loading motor label faces upward.)
- (4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-7a.

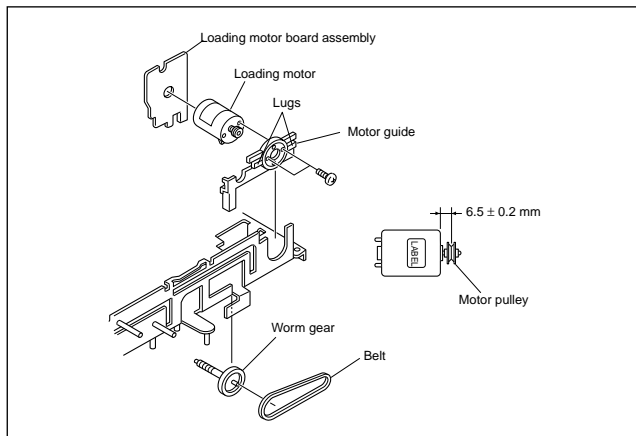


Fig. 2-2-7a

2.2.8 Capstan Motor

1. How to remove

- (1) Remove the belt (capstan) on the mechanism assembly back side.
- (2) Remove the three screws (A) and remove the capstan motor.

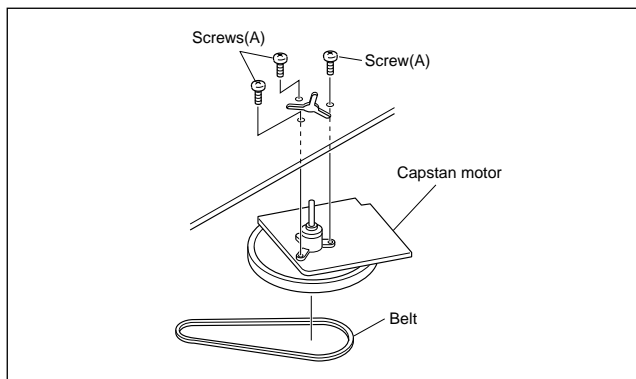


Fig. 2-2-8a

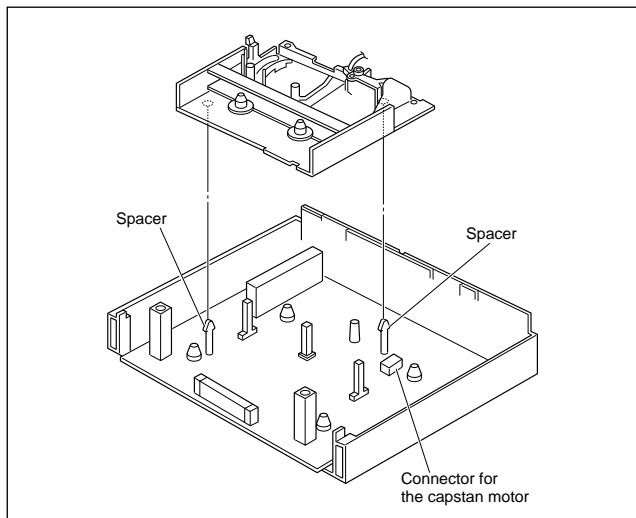


Fig. 2-2-8b

2. How to install (Centering the mounting position)

When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power breakdown because of current over - load. Install the capstan motor while following the procedure given below.

(The capstan motor is centrally located when the unit is shipped from the factory.)

- (1) Provisionally tighten the three screws (A) securing the capstan motor.
- (2) Install the mechanism assembly to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism.) Make sure that all the connectors for the mechanism assembly and the Main board assembly are correctly installed as indicated in Fig. 2-2-8b.
- (3) Making sure that the connector for the capstan motor is correctly mounted, and securely tighten the three screws (A).

Note:

- **When the capstan motor has been replaced with a new one, perform recording in the EP(or LP) mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).**

2.2.9 Pole Base Assembly (supply or take-up side)

1. How to remove

- (1) Remove the UV catcher 2 on the removal side by loosening the screw (A).
- (2) Remove the pole base assembly on the supply side from the mechanism assembly by loosening the screw (B) on the mechanism assembly back side and sliding the pole base assembly toward the UV catcher 2.
- (3) As for the pole base assembly on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate. (See the "Procedures for Lowering the Cassette holder assembly" of 1.3 DISASSEMBLY/ASSEMBLY METHOD.) Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing the screw (B).

Note:

- **After reinstalling the Pole base assembly and the UV catcher2, be sure to perform compatibility adjustment.**

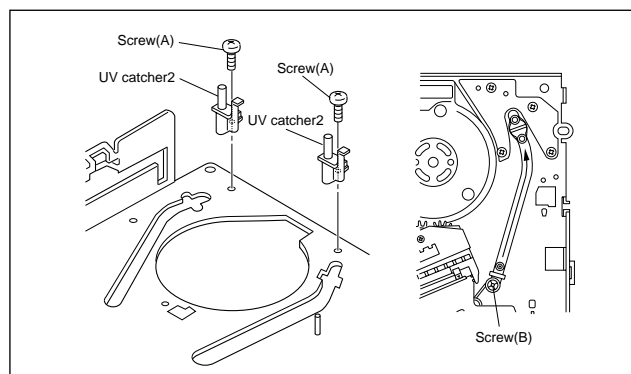


Fig. 2-2-9a

2.2.10 Rotary Encoder

1. How to remove

- (1) Remove the screw (A) and remove the rotary encoder by pulling it up. (See Fig. 2-2-10a.)

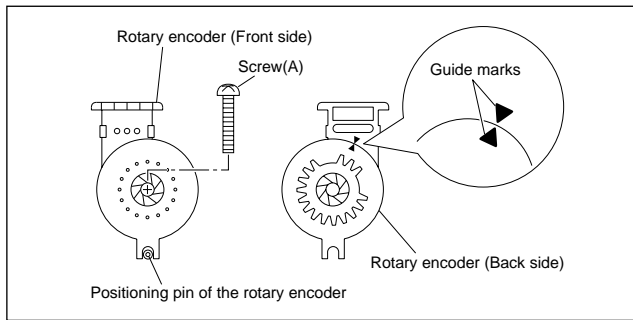


Fig. 2-2-10a

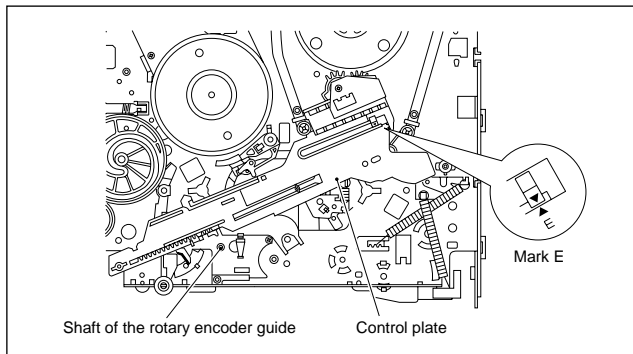


Fig. 2-2-10b

2. How to install (Phase matching)

- (1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the guide marks on the rotary encoder into alignment as indicated in Fig.2-2-10a. (See Fig. 2-2-10a and Fig. 2-2-10b.)
- (2) Turn over the rotary encoder with its guide marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.
- (3) Tighten the screw (A) to complete the installation.

2.2.11 Clutch Unit

- (1) Remove the belt wound around the capstan motor and the clutch unit.
- (2) Remove the slit washer and remove the clutch unit.

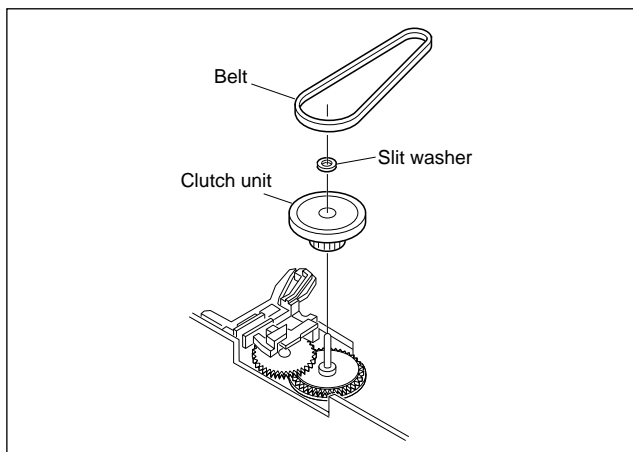


Fig. 2-2-11a

2.2.12 Change Lever Assembly, Direct Gear, Clutch Gear and Coupling Gear

1. How to remove

- (1) Release the two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever assembly.
- (2) Remove the slit washer retaining the direct gear and remove the latter.
Take care so as not to lose the washer and spring. (See Fig.2-2-12a.)

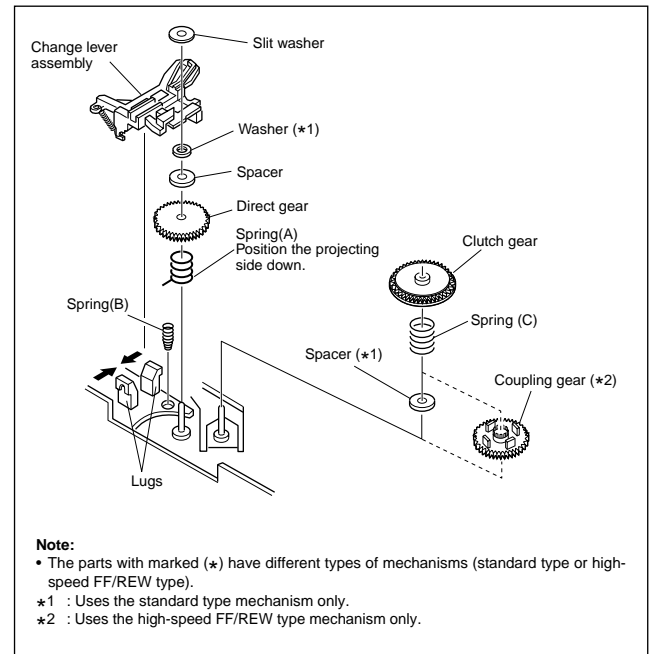


Fig. 2-2-12a

2. How to install

- (1) Install the clutch gear, spring (A), spring (C), direct gear, spacer and others to the individual shafts of the main deck, and finally the slit washer. (See Fig.2-2-12a.)
- (2) Let the spring (B) drops into the rotary encoder guide hole and install the change lever assembly. (Take care not to mistake a direction of the spring.) The point is to slightly lift the clutch gear and catch it from the both sides with the assembly. (See Fig.2-2-12b.)

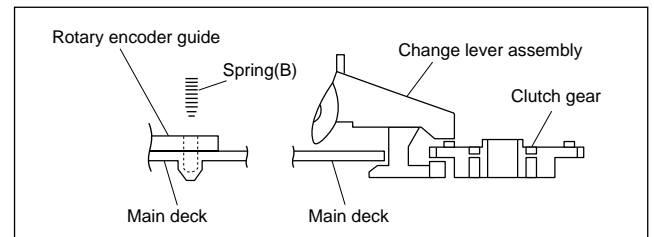


Fig. 2-2-12b

2.2.13 Link Lever

1. How to remove

- (1) Remove the two slit washers.
- (2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the locking section of the control plate.

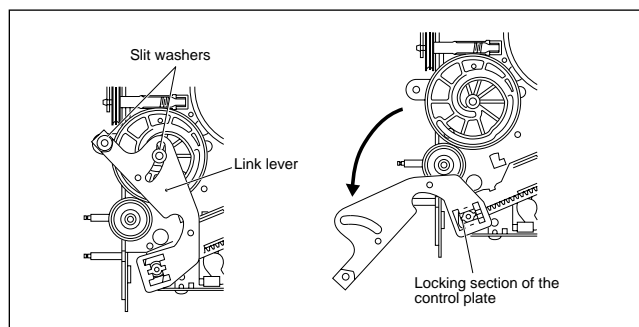


Fig. 2-2-13a

2. How to install (Phase matching)

- (1) Slide the control plate so that its mark E is aligned with the mark ▼ on the loading arm gear shaft. (See Fig.2-2-13b.)
- (2) Rotate the worm gear until the guide hole of the control cam is aligned exactly with the guide hole of the main deck. (See Fig.2-2-13c.)
- (3) Insert the link lever into the locking section of the control plate. (See Fig.2-2-13a.)
- (4) Rotate the link lever clockwise so that it is installed on the shafts in the center (centre) and on the left of the control cam.
- (5) Fasten the slit washers at these two points.

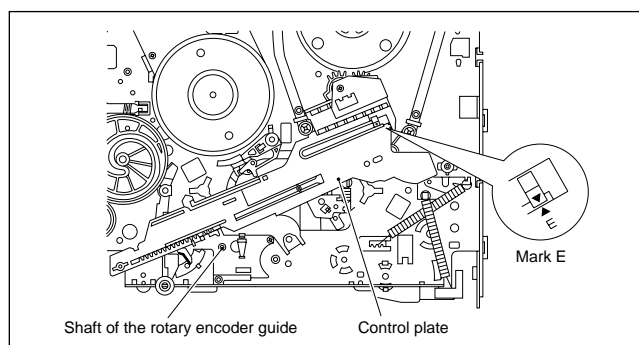


Fig. 2-2-13b

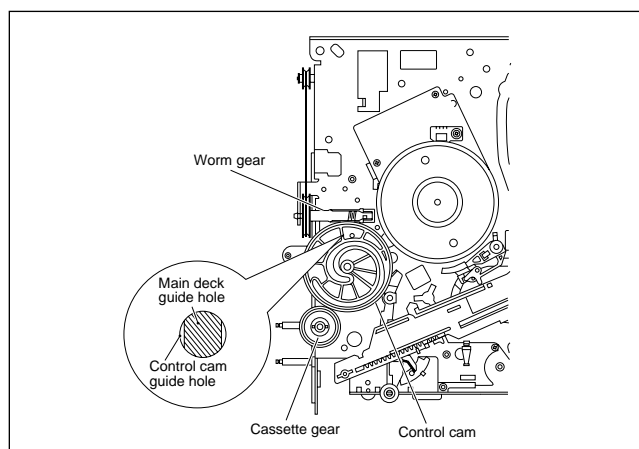


Fig. 2-2-13c

2.2.14 Cassette Gear, Control Cam and Worm Gear

1. How to remove

- (1) Remove the control cam by lifting it.
- (2) Open the two lugs of the cassette gear outward and pull the latter off.
- (3) Remove the belt wound around the worm gear and the loading motor.
- (4) Open the lug of the lid guide outward and remove the worm gear.

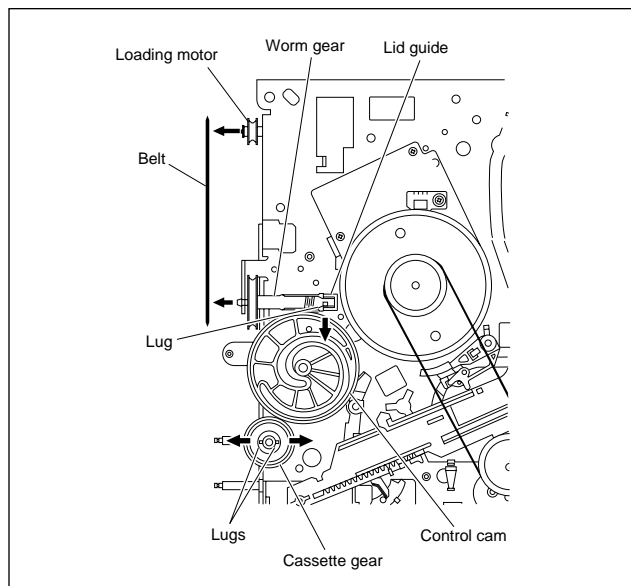


Fig. 2-2-14a

2.2.15 Control Plate

1. How to remove

- (1) Remove the screw (A) retaining the control bracket 1 and remove the latter.
- (2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-15a.)

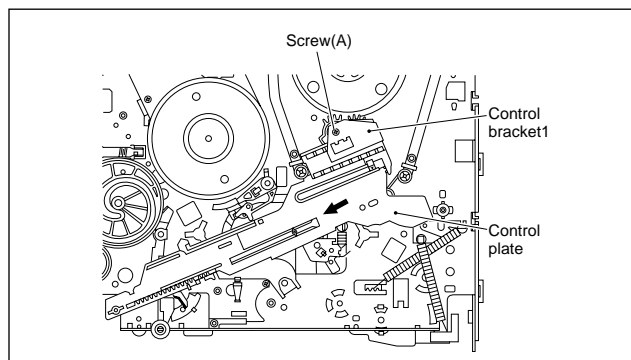


Fig. 2-2-15a

2. How to install (Phase matching)

- (1) Adjust the position of the idler arm assembly pin as indicated in Fig.2-2-15b (to the left of center (centre) of the R section).
- (2) Bring the guide hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.

- (3) Install the control plate so that the section A of the loading arm gear shaft fits into the hole (A) of the control plate, the section B of the control plate guide into the hole (B), and the control plate comes under the section C of the rotary encoder guide and the section D of the loading arm gear shaft while press-fit the pole base assembly (supply side) as indicated by the arrow. It is important that the tension arm assembly shaft is positioned closer toward you than the control plate. (See Fig.2-2-15c.)
- (4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-15c.)
- (5) Pull off the hexagonal wrench for positioning.

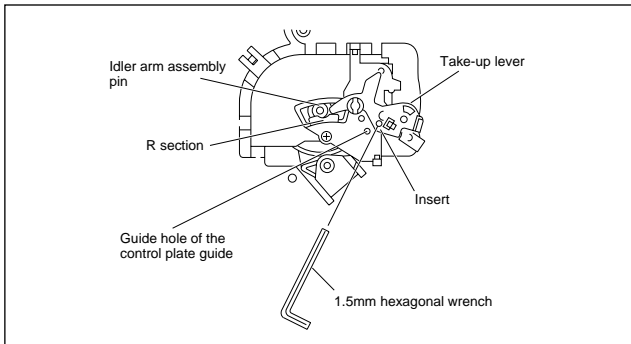


Fig. 2-2-15b

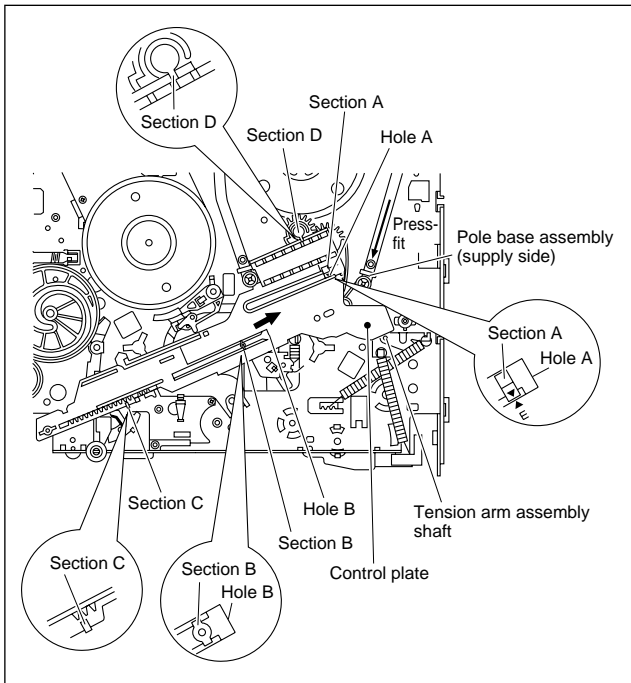


Fig. 2-2-15c

2.2.16 Loading Arm Gear (supply or take-up side) and Loading Arm Gear Shaft

1. How to remove

- (1) Remove the loading arm gear (supply side) by loosening the screw (A). (See Fig. 2-2-16a.)
- (2) Remove the screw (B) and remove the torsion arm from the pole base assembly (take-up side). (See Fig.2-2-16a.)

- (3) Turn the loading arm gear (take-up side) clockwise so that the notch of the loading arm gear (take-up side) is in alignment with the projection of the loading arm gear shaft and lift it. Likewise, turn the loading arm counterclockwise so that the notch is in alignment with the projection and remove the loading arm gear (take-up side). (See Fig.2-2-16a and Fig. 2-2-16b.)
- (4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove the screw (C) and remove the loading arm gear shaft by sliding it.

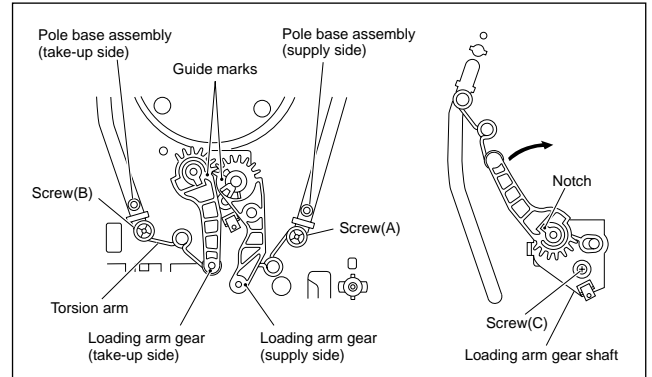


Fig. 2-2-16a

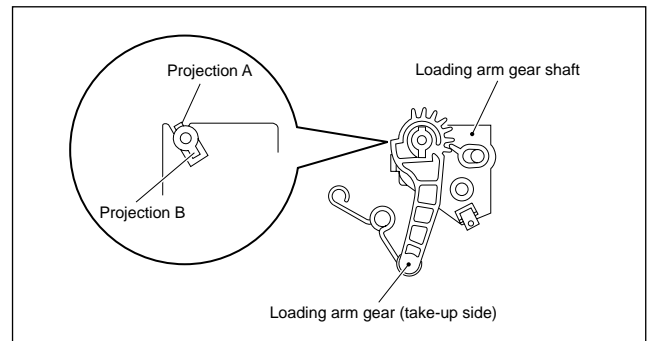


Fig. 2-2-16b

2. How to install

- (1) Align the notch of the loading arm gear (take-up side) to the projection B of the loading arm gear shaft and slip it over. Then rotate it clockwise for alignment with the projection A and slip it down to the bottom. (See Fig.2-2-16b.)
- (2) Then turn the loading arm gear (take-up side) counterclockwise. Hang the torsion arm on the pole base assembly (take-up side) and tighten the screw (B).
- (3) Install the loading arm gear (supply side) so that the guide mark of the loading arm gear (take-up side) is in alignment with the guide mark of the loading arm gear (supply side). Then hang the torsion arm on the pole base assembly (supply side) and tighten the screw (A). (See Fig.2-2-16a.)

2.2.17 Take-up Lever, Take-up Head and Control Plate Guide

- (1) Remove the spring of the take-up lever from the main deck.
- (2) Remove the lug (A) of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.
- (3) Remove the screw (A).
- (4) Align the idler arm assembly pin in the center (centre) of the R section of the control plate guide, remove the control plate guide lugs (B) and (C) from the main deck, and remove the control plate guide.

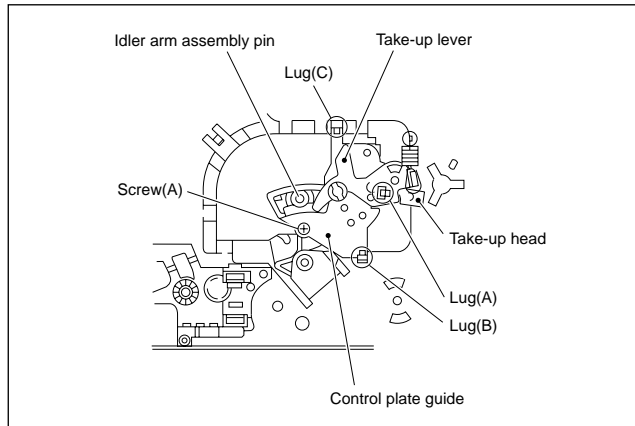


Fig. 2-2-17a

2.2.18 Capstan Brake Assembly

1. How to remove

- (1) Move the lug (A) of the capstan brake assembly in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-18a.)
- (2) Remove the lug (B) of the capstan brake assembly from the main deck and remove the capstan brake assembly.

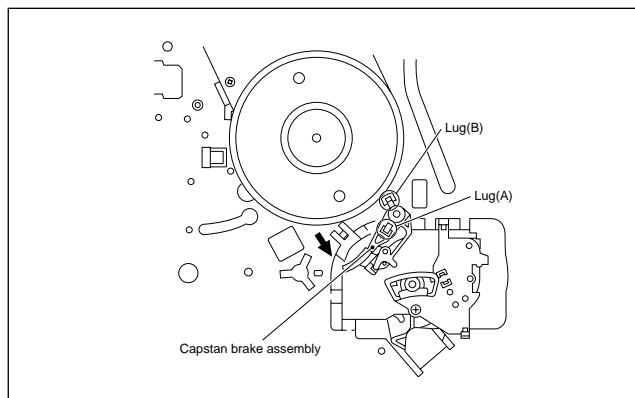


Fig. 2-2-18a

2.2.19 Sub Brake Assembly (take-up side)

1. How to remove

- (1) Remove the spring attached to the lid guide and sub brake assembly (take-up side).
- (2) Bring the lug (A) of the sub brake assembly (take-up side) into alignment with the notch of the main deck.
- (3) Remove the lugs (B) and (C) of the sub brake assembly (take-up side) from the main deck and remove the sub brake assembly (take-up side).

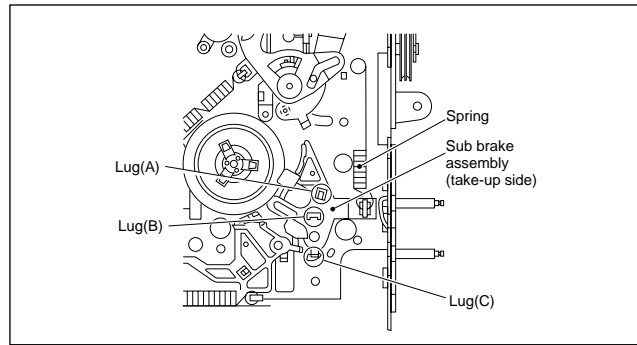


Fig. 2-2-19a

2.2.20 Main Brake Assembly (take-up side), Reel Disk (take-up side) and Main Brake Assembly (supply side)

1. How to remove

- (1) Move the main brake assembly (take-up side) in the arrow-indicated direction and remove the reel disk (take-up side).
- (2) Remove the spring attached to the main brake assembly.
- (3) Remove the lug (A) of the main brake assembly (take-up side) and pull out the lug (B) after bringing it into alignment with the main deck notch.
- (4) Remove the lugs (C), (D) and (E) of the main brake assembly (supply side) from the main deck and pull them off. (See Fig.2-2-20a.)
- (5) When installing the main brake assembly (take-up side), slide the brake lever in the direction as indicated by the arrow to prevent it from hitting the projection of the main brake assembly (take-up side). (See Fig.2-2-20b.)

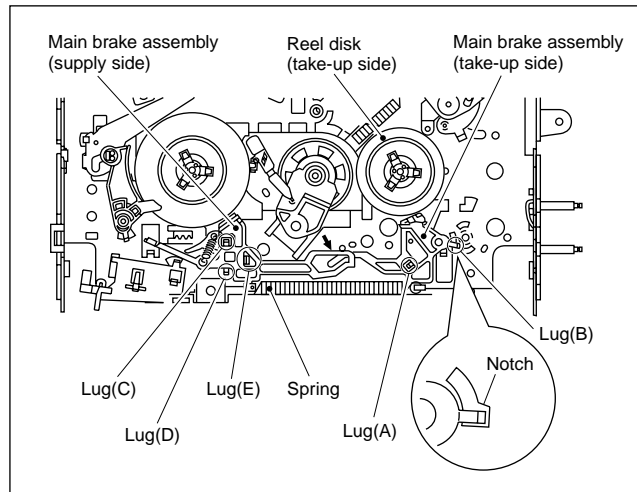


Fig. 2-2-20a

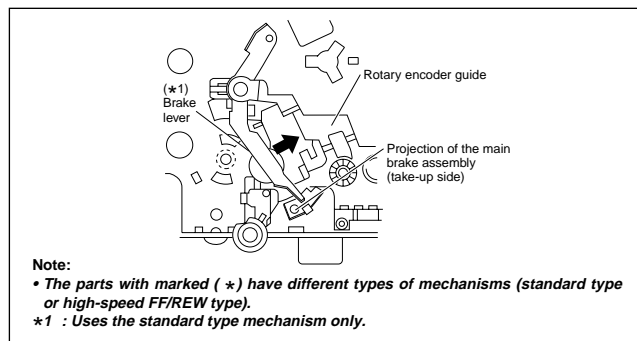


Fig. 2-2-20b

2.2.21 Tension Brake Assembly, Reel Disk (supply side) and Tension Arm Assembly

1. How to remove

- (1) Remove the three lugs of the tension brake assembly from the main deck and pull them off.
- (2) Remove the reel disk (supply side) by loosening in the arrow-indicated direction the main brake assembly (supply side).
- (3) Remove the tension spring on the back of the main deck. Then release the lug of the tension arm bearing in the arrow-indicated direction and draw out the tension arm assembly. (See Fig. 2-2-21a.)

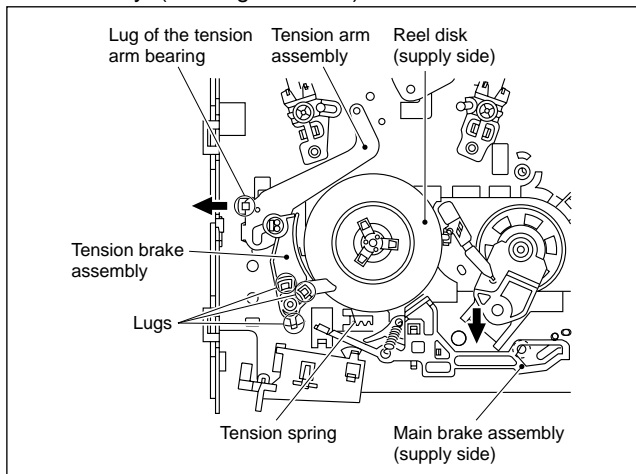


Fig. 2-2-21a

2.2.22 Idler Lever, Idler Arm Assembly

1. How to remove

- (1) Remove the lug of the idler lever from the main deck and remove the hook fitted in the idler arm assembly hole by lifting it.
- (2) Remove the slit washer and pull out the idler arm assembly.

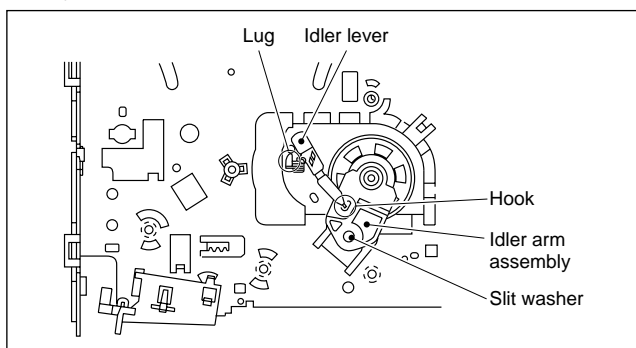


Fig. 2-2-22a

2.2.23 Stator Assembly

- (1) Remove the flat cable.
- (2) Remove the two screws (A).
- (3) Remove the stator assembly by lifting in the arrow-indicated direction. (Take care that the brush spring does not jump out.)
- (4) After installation, be sure to perform the PB switching point adjustment according to the electrical adjustment procedure.

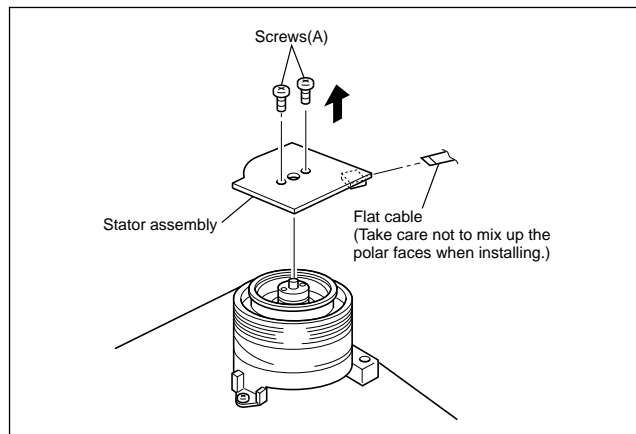


Fig. 2-2-23a

2.2.24 Rotor Assembly

- (1) Remove the stator assembly.
- (2) Remove the two screws (B) and remove the rotor assembly.

Note:

- When installing the rotor assembly, note that a normal picture cannot be obtained without ensuring the phase matching as mentioned below.

- (3) Match the phases of the upper drum assembly and the rotor assembly as indicated in Fig.2-2-24a.
- (4) Place the upper drum assembly hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-24a.)

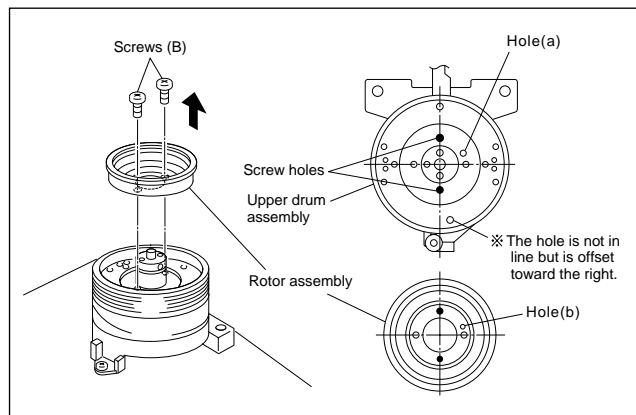


Fig. 2-2-24a

2.2.25 Upper Drum Assembly

1. How to remove

- (1) Remove the stator assembly and rotor assembly.
- (2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
- (3) Remove the upper drum assembly and remove the washer using tweezers.

Note:

- **When replacement is required, control the up- down movement of the brush. Never apply grease.**

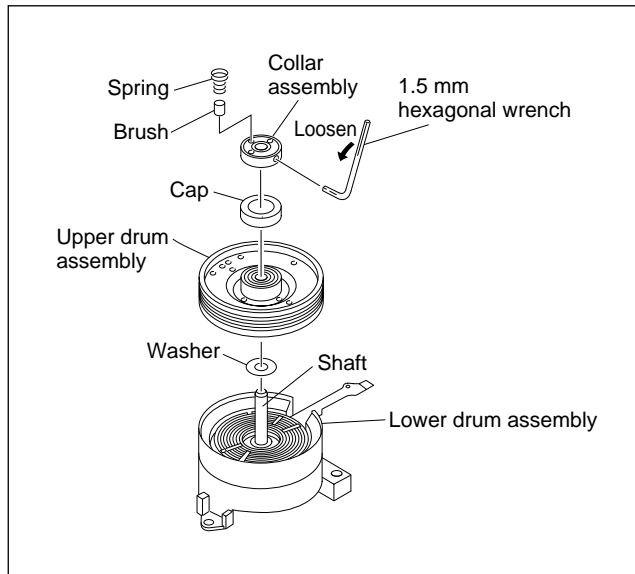


Fig. 2-2-25a

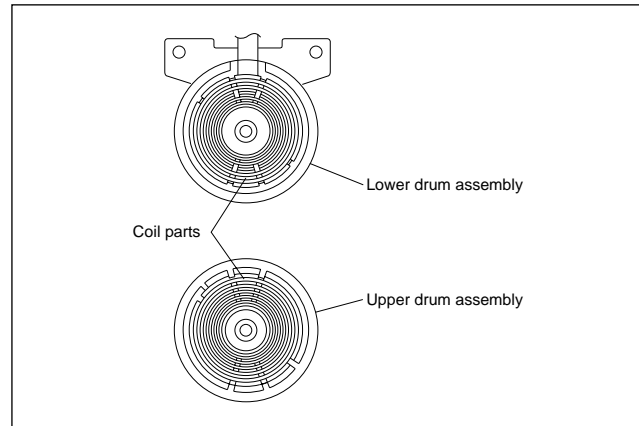


Fig. 2-2-25b

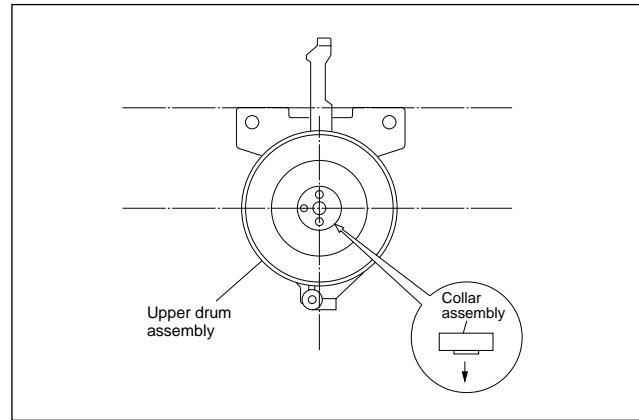


Fig. 2-2-25c

2. How to install

- (1) Clean the coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-25b.)
- (2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-25a.)

Note:

- **When replacing the upper drum assembly, replace it together with the washer.**

- (3) Install the cap to the upper drum assembly.
- (4) Position the collar assembly as indicated in Fig.2-2-25c while controlling its up- down movement.
- (5) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.
- (6) After installation, gently turn the upper drum assembly with your hand to make sure that it turns normally. Then install the brush and the spring.
- (7) Install the rotor assembly and stator assembly according to Fig 2-2-23a and 2-2-24a.
- (8) When installation is complete, clean the upper drum assembly and lower drum assembly and carry out the following adjustments.

- PB switching point adjustment
- Slow tracking adjustment
- Compatibility adjustment (Be sure to check for compatibility for the EP (or LP) mode.)

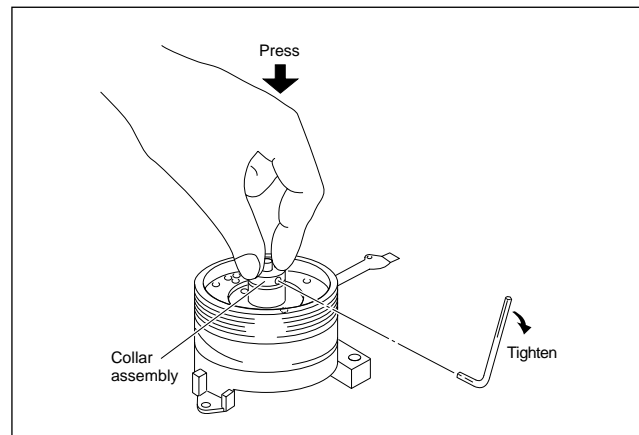


Fig. 2-2-25d

2.3 COMPATIBILITY ADJUSTMENT

Notes:

- **Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the audio control head, drum assembly or any part of the tape transport system.**
- **To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.**
- **Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.**
- **When using the Jig RCU, set its custom code to match the custom code of the VCR.**

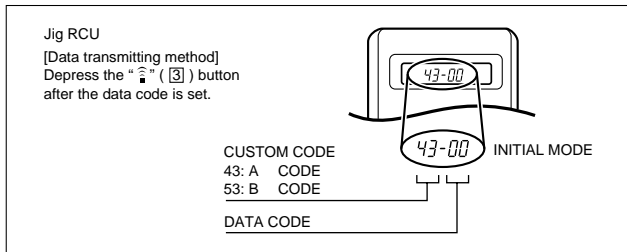


Fig. 2-3a Jig RCU [PTU94023B]

2.3.1 Checking/Adjustment of FM Waveform Linearity

Signal	(A1) (A2)	<ul style="list-style-type: none"> • Alignment tape(SP, staircase, PAL) [MHPE] • Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 2-3-1a.)
- (5) Reduce the V.PB FM waveform while pressing the channel buttons (+, -) during playback. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 2-3-1c.)

- (6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
- (7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
- (8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 2-3-1d.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

- (9) Repeat steps (1) to (8) by using the alignment tape (A2).

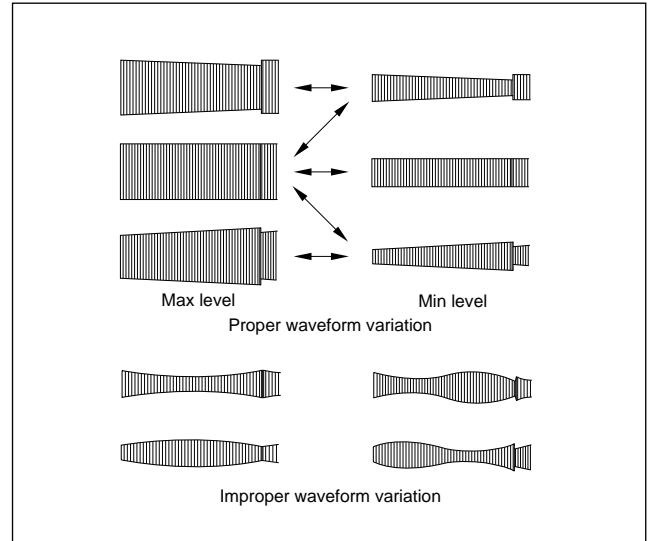


Fig. 2-3-1a

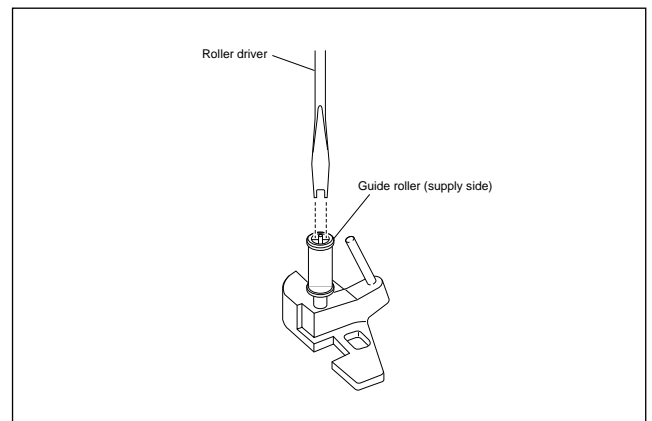


Fig. 2-3-1b

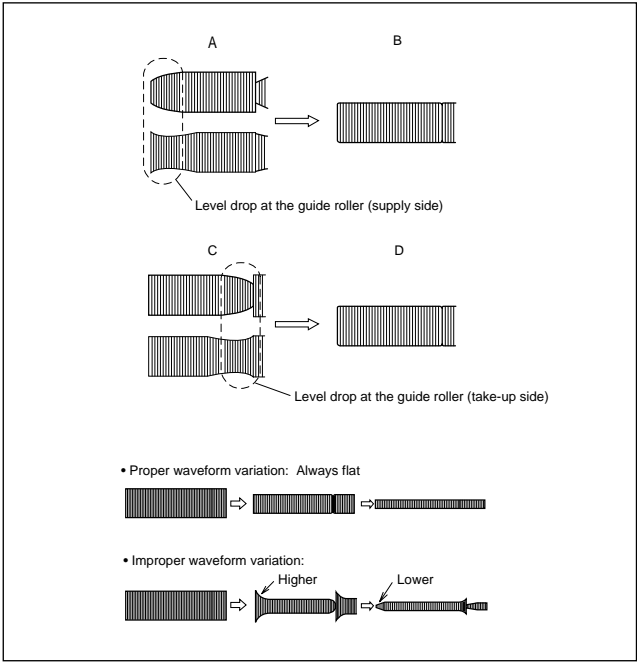


Fig. 2-3-1c

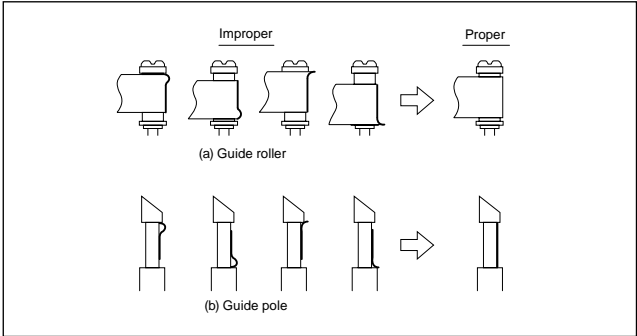


Fig. 2-3-1d

2.3.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head

Note:
 • *Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See Fig.2-2-6c.)*

Signal	(A)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

- (1) Play back the alignment tape (A).
- (2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.

- (3) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

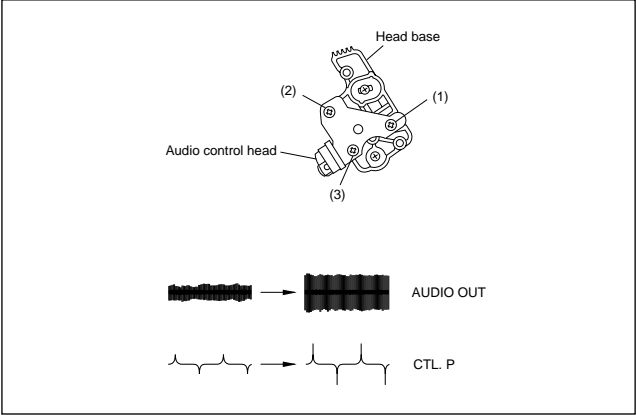


Fig. 2-3-2a

2.3.3 Checking/Adjustment of the Audio Control Head Phase (X-Value)

Signal	(A1)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• A/C head positioning tool [PTU94010]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Loosen the screws (4) and (5), then set the A/C head positioning tool to the innermost projected part of the A/C head. (See Fig. 2-3-3a.)
- (5) Turn the A/C head positioning tool fully toward the capstan. Then turn it back gradually toward the drum and stop on the second peak point position of the V.PB FM waveform output level. Then tighten the screws (4) and (5).
- (6) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum. If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

[Perform adjustment steps (7) to (10) only for 2 Head models equipped with LP mode.]

- (7) Then play back the alignment tape (A2).
- (8) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (9) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
- (10) If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

Note:

- After adjusting, always perform the confirmation and re-adjustment of the item 2.3.4.

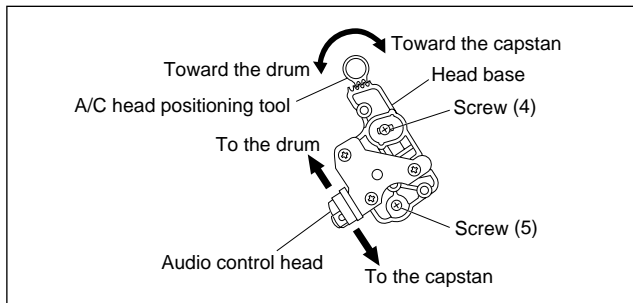


Fig. 2-3-3a

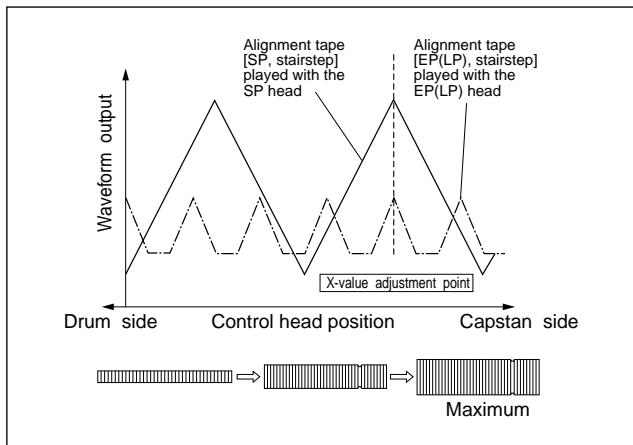


Fig. 2-3-3b

2.3.4 Checking/Adjustment of the Standard Tracking Preset

Signal	(A)	• Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB → Auto adjust
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code "50"
Specified value	(G)	• STOP mode (Maximum V.PB FM waveform)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Play back the alignment tape (A).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Confirm that the automatic tracking operation is completed.
- (4) Set the VCR to the Auto adjust mode by transmitting the code (F) twice from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
- (5) If the VCR enters the eject mode, perform adjustment for the audio control head phase (X-value) again.

2.3.5 Checking/Adjustment of the Tension Pole Position

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B)	• PB
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 - 5 × 10 ⁻³ Nm)

- (1) Play back the back tension cassette gauge (A).
- (2) Check that the indicated value on the left side gauge is within the specified value (G).
- (3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.
 - 1) Set the VCR to the mechanism service mode. (See 1.5 MECHANISM SERVICE MODE.)
 - 2) Set the VCR to the play back mode and adjust by turning adjustment pin to align the tension arm assembly edge with the main deck hole (A) on the right edge marker. (See Fig. 2-3-5a)

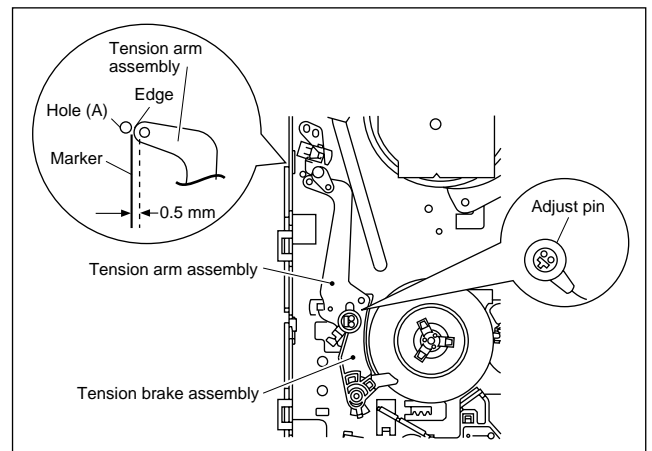
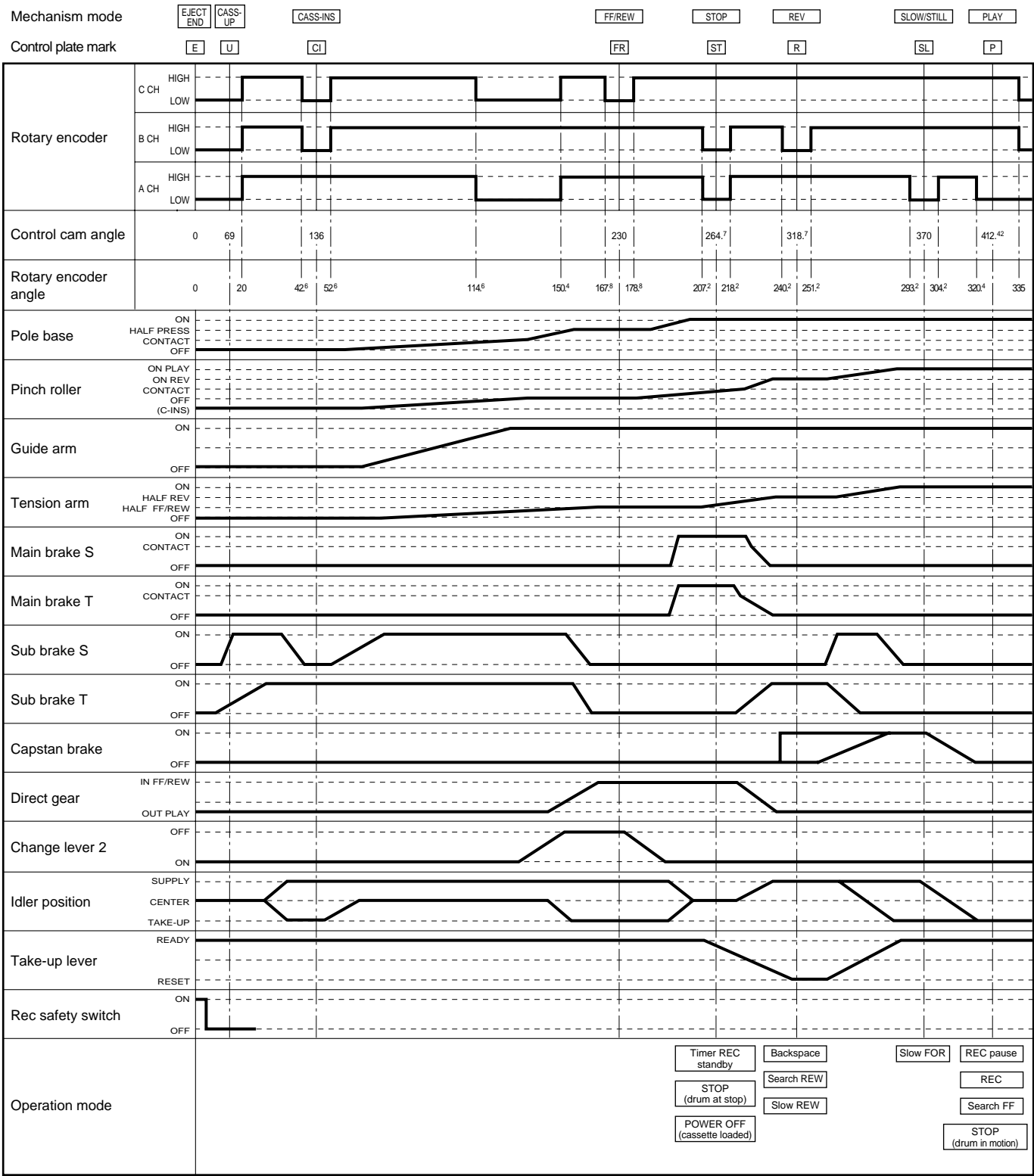


Fig. 2-3-5a

Mechanism Timing Chart



SECTION 3 ELECTRICAL ADJUSTMENT

3.1 PRECAUTION

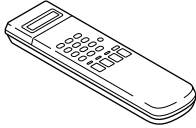
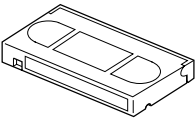
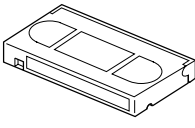
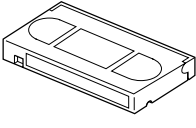
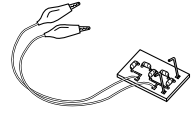
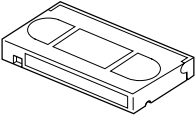
The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.

In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.1.1 Required test equipments

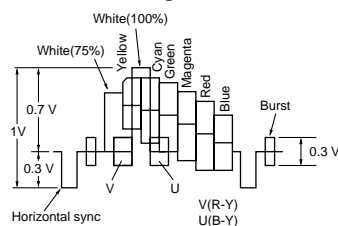
- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Frequency counter
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL]
- Recording tape
- Digit-key remote controller(provided)

3.1.2 Required adjustment tools

Jig RCU PTU94023B	Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L
		
Alignment tape (SP stairstep, NTSC) MHP	LPF PTU93006	Alignment tape (S-VHS, SP/LP, color (colour) bar) MH-2H
		

3.1.3 Color (colour) bar signal, Color (colour) bar pattern

• Colour bar signal [PAL]



• Colour bar pattern [PAL]

(75%)	White	Yellow	Cyan	Green	Magenta	Red	Blue
V	U	White 100%	Black				

3.1.4 Switch settings and standard precautions

The SW settings of the VCR and the standard precautions for the electrical adjustments are as follows.

- When using the Jig RCU, set its custom code to match the custom code of the VCR.

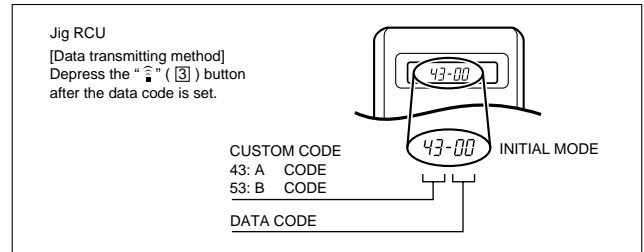


Fig. 3-1-4a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.

If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF

- Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.

- In the Signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.

3.1.5 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The Main board assembly have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- In the EVR adjustment mode, the value is varied with the channel buttons (+, -). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.
- When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input. The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.
- When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.

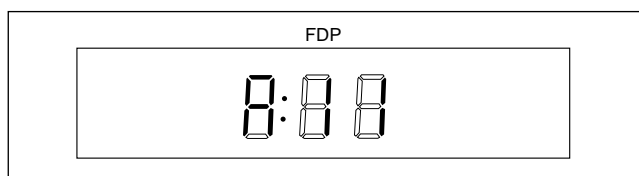


Fig. 3-1-5a EVR mode

3.2 SERVO CIRCUIT

3.2.1 Switching point

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> • Stairstep signal • Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(SP, stairstep, NTSC) [MHP]
Mode	(B)	<ul style="list-style-type: none"> • PB • TBC: OFF
Equipment	(C)	<ul style="list-style-type: none"> • Oscilloscope
Measuring point	(D1) (D2)	<ul style="list-style-type: none"> • VIDEO OUT terminal (75Ω terminated) • TP106 (PB. FM)
External trigger	(E)	<ul style="list-style-type: none"> • TP111 (D.FF)/slope : –
Adjustment part	(F)	<ul style="list-style-type: none"> • Jig RCU: Code “51” or “52”
Specified value	(G)	<ul style="list-style-type: none"> • $8.0 \pm 0.5H$ [MHPE] • $7.5 \pm 0.5H$ [MHP]
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B]

- (1) Play back the signal (A1) of the alignment tape (A2).
- (2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
- (3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes maximum.
- (5) Transmit the code (F) from the Jig RCU to adjust so that the trigger point of the VIDEO OUT waveform is changed from the trailing edge of the V.sync signal becomes the specified value (G).
- (6) Set the VCR to the stop mode or eject mode.
- (7) Play back the signal (A1) of the alignment tape (A3).
- (8) Repeat steps (2) to (6).

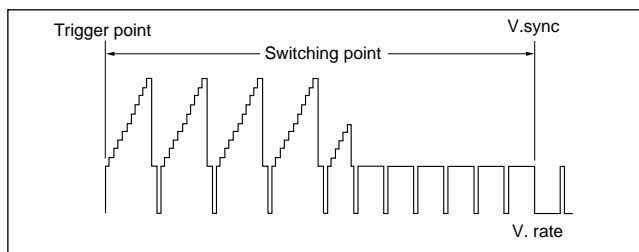


Fig. 3-2-1a Switching point

3.2.2 Slow tracking preset

Signal	(A1) (A2)	<ul style="list-style-type: none"> • Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	<ul style="list-style-type: none"> • S-VHS SP • S-VHS LP
Measuring point	(D)	<ul style="list-style-type: none"> • TV-Monitor
Adjustment part	(F)	<ul style="list-style-type: none"> • Jig RCU: Code “71” or “72”
Specified value	(G)	<ul style="list-style-type: none"> • Minimum noise
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B]

- (1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (2) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (3) Set the VCR to the FWD slow (+1/6×) mode.
- (4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
- (5) Set the VCR to the Stop mode.
- (6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
- (7) Repeat steps (3) to (6) in the REV slow (–1/6×) mode.
- (8) Repeat steps (1) to (7) in the mode (B2).

Note:

- **For FWD slow (+1/6×) playback, transmit the code “08” from the Jig RCU to enter the slow playback mode, and transmit the code “D0” for REV slow (–1/6×) mode.**

3.2.3 Dynamic Drum preset

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> • Alignment tape(LP, stairstep, PAL) [MHPE-L] • Ext. input • Stairstep signal
Mode	(B1) (B2) (B3)	<ul style="list-style-type: none"> • LP 2× (FWD) search • LP • LP 1/6× (FWD) slow
Equipment	(C)	<ul style="list-style-type: none"> • Oscilloscope
Measuring point	(D)	<ul style="list-style-type: none"> • TP106 (PB. FM)
External trigger	(E)	<ul style="list-style-type: none"> • TP111 (D.FF)/slope : +
Adjustment part	(F)	<ul style="list-style-type: none"> • Jig RCU: Code “A0” or “A1”
Specified value	(G)	<ul style="list-style-type: none"> • Flat V.PB FM waveform
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B] • Digit-key remote controller

- (1) Play back the signal (A3) of the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E) to observe the V.PB FM waveform at the measuring point (D).
- (3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes maximum.
- (5) Set the VCR to the mode (B1).
- (6) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes half of the maximum value.
- (7) Transmit the code (F) from the Jig RCU to adjust so that the V.PB FM waveform becomes the specified value (G).
- (8) Set the VCR to the PB mode once, set the VCR to the mode (B1) again and confirm that the V.PB FM waveform is the specified value (G). If the specified value (G) is not obtained, repeat step (7).
- (9) Record the signal (A3) in the mode (B2), and play back the recorded signal.
- (10) Repeat steps (3) to (8), for perform step (5) in the mode (B3).

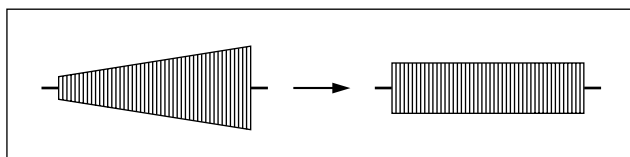


Fig. 3-2-3a DD preset

3.3 VIDEO CIRCUIT

3.3.1 D/A level

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> • Ext. S-input / Ext. input • Color (colour) bar signal [PAL] • S-VHS tape
Mode	(B)	<ul style="list-style-type: none"> • S-VHS • EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
Adjustment part	(F)	• VR1401 (D/A LEVEL ADJ) [3D DIGITAL/2M board]
Specified value (Note)	(G)	• 1.00 ± 0.015 Vp-p (reference value)

- (1) Insert the cassette tape (A3) to enter the mode (B).
- (2) Observe the Y OUT waveform at the measuring point (D).
- (3) Check the Y level value when the External S-input (Y/C separated video signal).
- (4) Switch the input signal to the External input (composite video signal), and adjust the adjustment part (F) so that the Y level becomes the same value observed in step (3).

Note:

- **The specified value (G) is just a reference value to be obtained when the External S-Video (Y/C separated video) signal is input. In actual adjustment, set it to the value observed in step (3).**

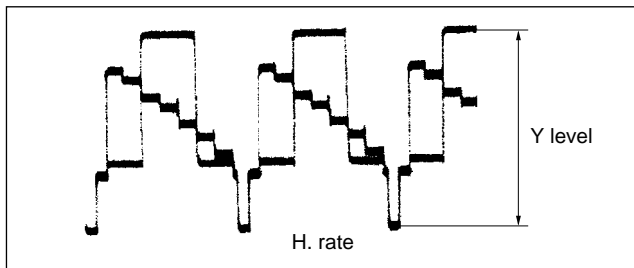


Fig. 3-3-1a D/A level

3.3.2 EE Y level

Signal	(A1) (A2)	<ul style="list-style-type: none"> • Ext. input • Color (colour) bar signal [PAL]
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	<ul style="list-style-type: none"> • Jig RCU: Code "57" • A:11 (Press remote controller "1" key twice)
Specified value	(G)	• 1.00 ± 0.03 Vp-p
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B] • Digit-key remote controller

- (1) Observe the Y OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
- (4) Adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).

- (5) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

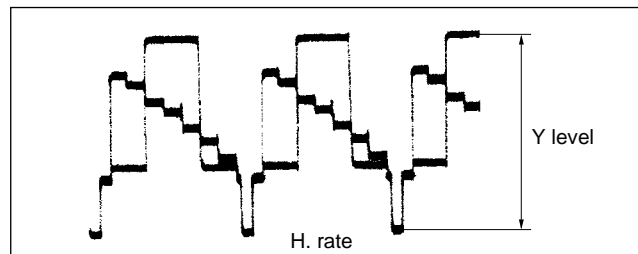


Fig. 3-3-2a EE Y level

3.3.3 PB Y level (S-VHS / VHS)

Signal	(A1) (A2)	<ul style="list-style-type: none"> • Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	<ul style="list-style-type: none"> • S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	<ul style="list-style-type: none"> • Jig RCU: Code "57" • A:11 (Press remote controller "1" key twice)
Specified value	(G)	• 1.00 ± 0.03 Vp-p
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B] • Digit-key remote controller

- (1) Observe the Y OUT waveform at the measuring point (D).
- (2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (3) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (5) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
- (6) Adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).
- (7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (8) Repeat steps (2) to (7) in the mode (B2).

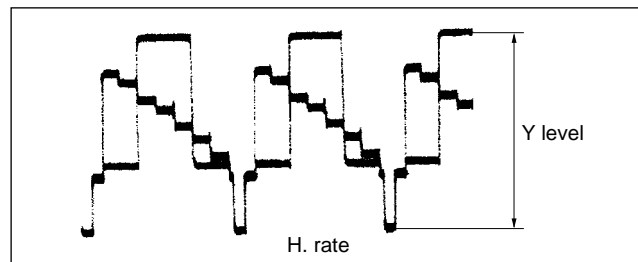


Fig. 3-3-3a PB Y level

3.3.4 REC color (colour) level

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> Alignment tape(S-VHS, SP/LP, Color(colour) bar) [MH-2H] Ext. input Color (colour) bar signal [PAL]
Mode	(B1) (B2)	<ul style="list-style-type: none"> S-VHS SP S-VHS LP
Equipment	(C)	<ul style="list-style-type: none"> Oscilloscope
Measuring point	(D1) (D2)	<ul style="list-style-type: none"> TP106 (PB. FM) PB color (colour) output of the LPF
External trigger	(E)	<ul style="list-style-type: none"> TP111 (D.FF)
EVR mode	(F1)	<ul style="list-style-type: none"> Jig RCU: Code "57"
EVR address	(F2)	<ul style="list-style-type: none"> A:02 (Press remote controller "0" and "2" keys)
Specified value	(G)	<ul style="list-style-type: none"> SP: "B" x 125 ± 5% LP: "B" x 125 ± 5%
Adjustment tool	(H1) (H2) (H3)	<ul style="list-style-type: none"> Jig RCU [PTU94023B] Digit-key remote controller LPF [PTU93006] (See Fig. 3-3-4a.)

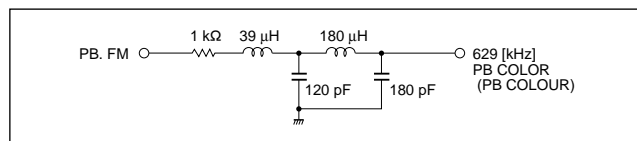


Fig. 3-3-4a LPF

- Connect the adjustment tool (H3) to the measuring point (D1).
- Apply the external trigger signal to D.FF (E) to observe the PB color (colour) waveform at the measuring point (D2).
- Play back the signal (A3) in the mode (B1) of the alignment tape (A1).
- Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- Adjust tracking by pressing the channel buttons (+, -) so that the PB color (colour) waveform becomes maximum. Make a note of the higher PB color (colour) level as "B" at this time.
- Record the signal (A3) in the mode (B1), and play back the recorded signal.
- Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
- Adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the higher level channel becomes the specified value (G) of the note "B" level as shown in Fig. 3-3-4b. (Adjust before recording, then confirm it by playing back.)
- After adjustment, record the signal (A3) then playing it back again. At this time, confirm that there is no inverting phenomenon or noise appearing on the playback screen.
- Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- Repeat steps (3) to (11) in the mode (B2).

Note:

- After adjusting, always perform the confirmation and re-adjustment of the item 3.4.1.

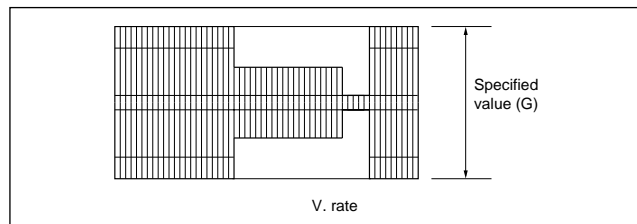


Fig. 3-3-4b REC color (colour) level

3.3.5 Video EQ (Frequency response)

Signal	(A1) (A2)	<ul style="list-style-type: none"> Ext. S-input Video sweep signal
Mode	(B1) (B2) (B3)	<ul style="list-style-type: none"> S-VHS SP S-VHS LP Picture Control / Smart Picture REC : Normal / Natural PB : Edit / Distinct
Equipment	(C)	<ul style="list-style-type: none"> Oscilloscope
Measuring point	(D1)	<ul style="list-style-type: none"> Y OUT terminal (75Ω terminated)
Frequency marker(D2)	(D2)	<ul style="list-style-type: none"> 3 [MHz]
External trigger	(E)	<ul style="list-style-type: none"> TP111 (D.FF)
EVR mode	(F1)	<ul style="list-style-type: none"> Jig RCU: Code "57"
EVR address	(F2)	<ul style="list-style-type: none"> A:03 (Press remote controller "0" and "3" keys)
Specified value	(G)	<ul style="list-style-type: none"> SP: 3.6 ± 0.4 div. (-1 ± 1 dB) LP: 3.2 ± 0.4 div. (-2 ± 1 dB)
Adjustment tool	(H)	<ul style="list-style-type: none"> Jig RCU [PTU94023B] Digit-key remote controller

- Apply the external trigger signal to D.FF (E) to observe the Y OUT waveform at the measuring point (D1).
- Record the signal (A2) in the mode (B1), and play back the recorded signal.
- Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
- Set the slope of the oscilloscope to the channel having higher (D2) marker level of the Y OUT waveform [signal (A2)]. Then set the 100 kHz marker level to the "4" scale on the oscilloscope. In this condition, adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the (D2) marker level reaches the specified value (G).
- Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- Repeat steps (2) to (7) in the mode (B2).

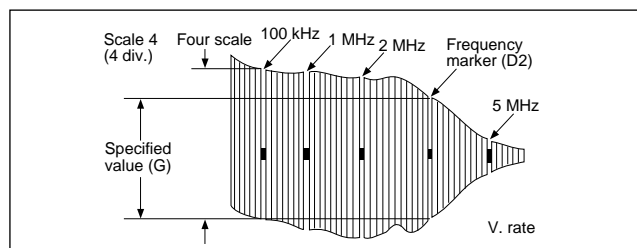


Fig. 3-3-5a Video EQ (Frequency Response)

3.3.6 AUTO PICTURE initial setting

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> • Ext. input • Video: Optional • VHS tape
Mode	(B)	• EE → Auto adjust (SP/LP REC → PB)
Adjustment part	(F)	• Jig RCU : Code "58"
Specified value	(G)	• STOP mode
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Insert the cassette tape (A3).
- (2) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed. When the VCR enters the eject mode, repeat steps (1) to (2) again.

3.4 AUDIO CIRCUIT

Notes:

- **This adjustment should be done after the "REC color (colour) level adjustment" for the video circuit has been completed.**
- **GND (Ground) should be taken from the Tuner shield case.**

3.4.1 Audio REC FM

Signal	(A1) (A2) (A3)	<ul style="list-style-type: none"> • Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. FM)
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig RCU: Code "57"
EVR address	(F2)	• A: 30 (Press remote controller "3" and "0" keys.)
Specified value	(G1) (G2)	<ul style="list-style-type: none"> • 450 ± 100 mVp-p • More than 300 mVp-p
Adjustment tool	(H)	<ul style="list-style-type: none"> • Jig RCU [PTU94023B] • Digit-key remote controller

- (1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
- (2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
- (3) Press the channel buttons (+, -) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
- (4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
- (5) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (6) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
- (7) Adjust with the channel buttons (+, -) on the VCR (or on the remote controller) so that the A.PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)
- (8) If the specified value (G1) is not obtained, adjust with the channel buttons (+, -) so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)
- (9) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

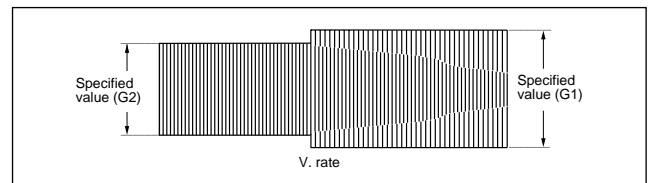


Fig. 3-4-1a Audio REC FM

3.5 SYSCON CIRCUIT

Note:

- **When perform this adjustment, remove the Mechanism assembly.**

3.5.1 Timer clock


Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point	(D1)	• IC3001 pin 61
Short point	(D2)	• IC3001 pin 24
	(D3)	• C3026 + and -
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	<ul style="list-style-type: none"> • 1024.008 ± 0.001 Hz • $(976.5549 \pm 0.0010 \mu\text{sec})$

- (1) Connect the frequency counter to the measuring point (D1).
- (2) Connect the short wire between the short point (D2) and Vcc (5V).
- (3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
- (4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
- (5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

SECTION 4 CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

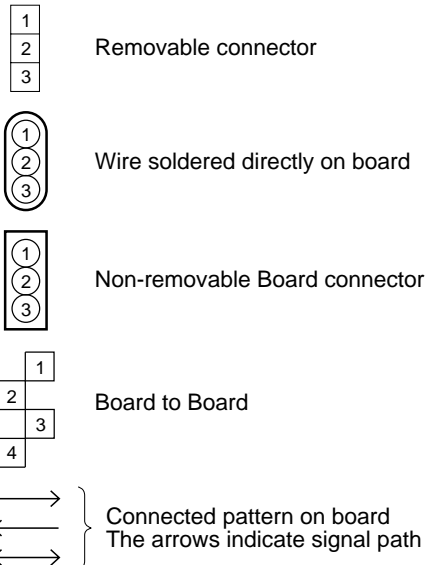
- 1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K or k: kΩ (1000Ω), M: MΩ (1000kΩ)
- 2) All capacitance values are in μF, (P: PF).
- 3) All inductance values are in μH, (m: mH).
- 4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

AUX or AUX(L) : Active at low

3. Interpreting Connector indications

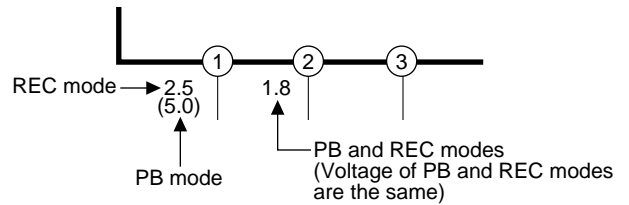


4. Voltage measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
— : Unmeasurable or unnecessary to measure
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

4) Indication on schematic diagram

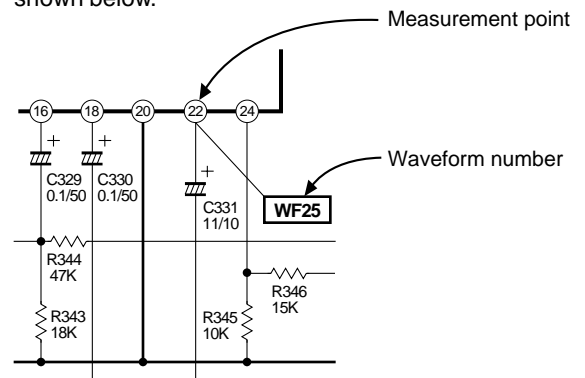
Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



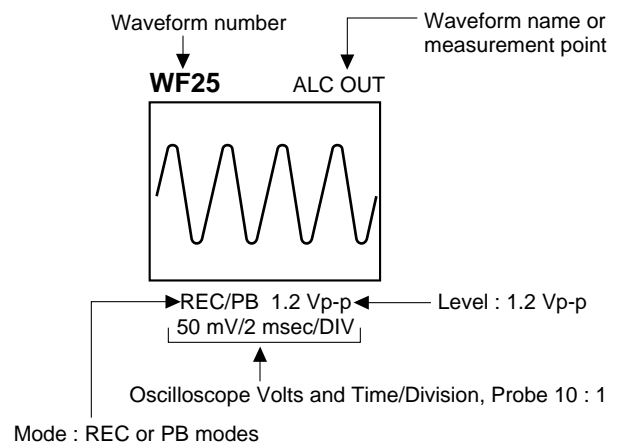
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
- 4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.








5) Waveform indications





6. Signal path Symbols

The arrows indicate the signal path as follows.

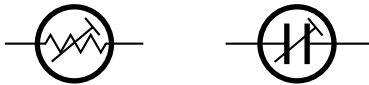
-  Playback signal path
-  Playback and recording signal path
-  Recording signal path (including E-E signal path)
-  Capstan servo path
-  Drum servo path

(Example)

-  R-Y Playback R-Y signal path
-  Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

“OPEN” is indicated by the parts not mounted on the circuit board.



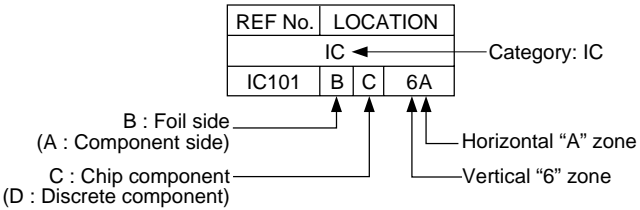
CIRCUIT BOARD NOTES

1. Foil and Component sides

- 1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

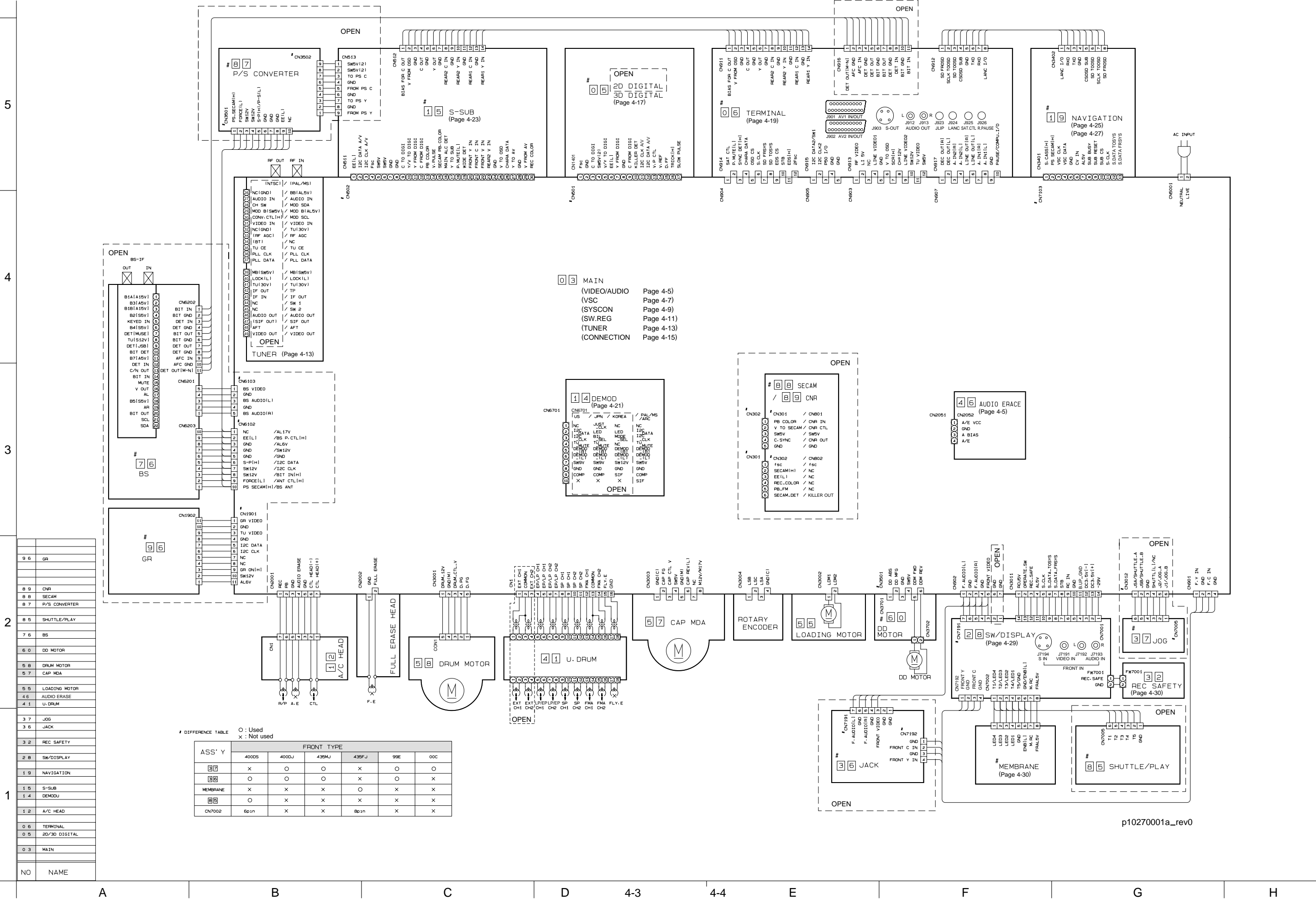
Parts location are indicated by guide scale on the circuit board.



Note:

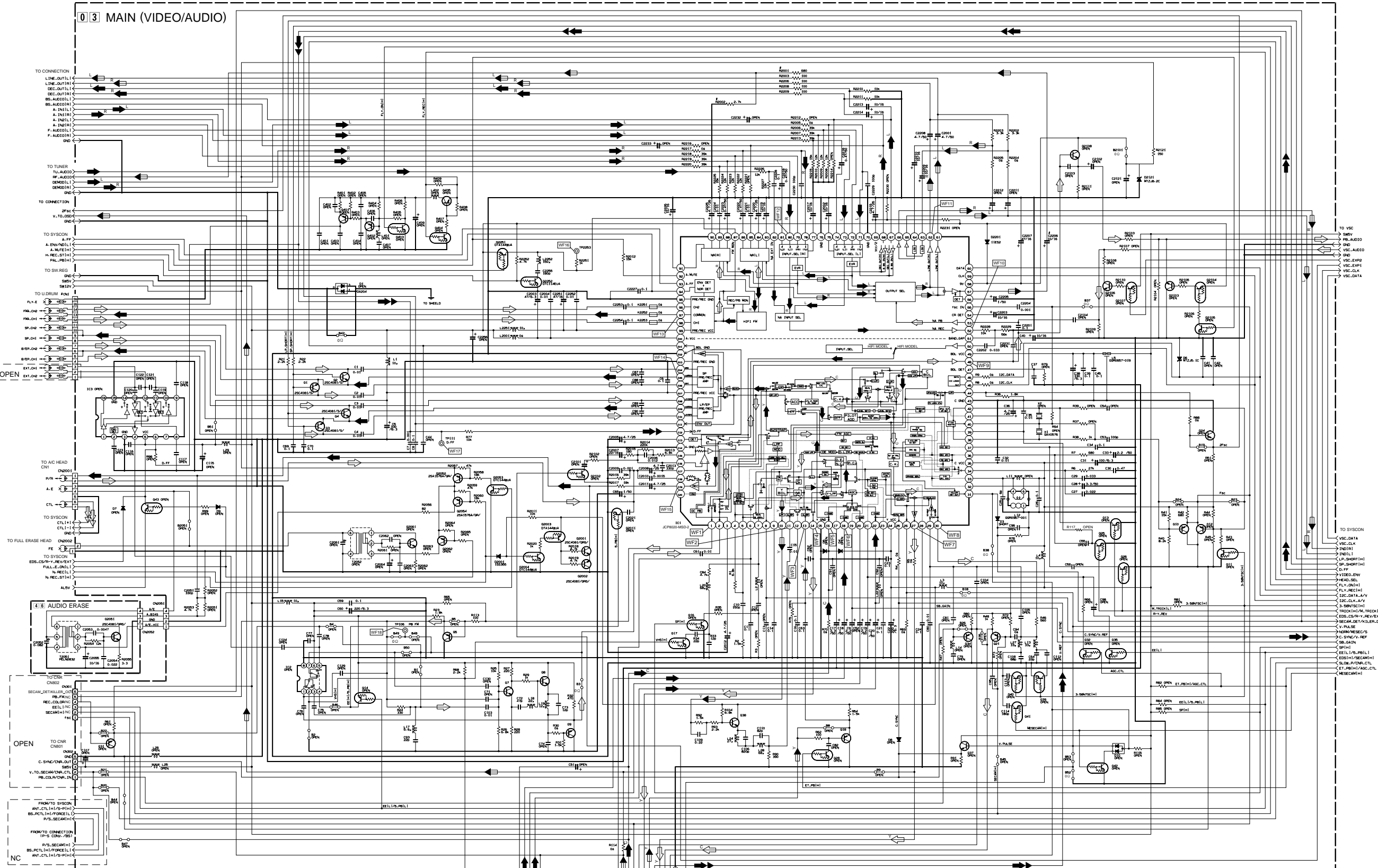
For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS



4.2 VIDEO/AUDIO AND AUDIO ERASE SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.

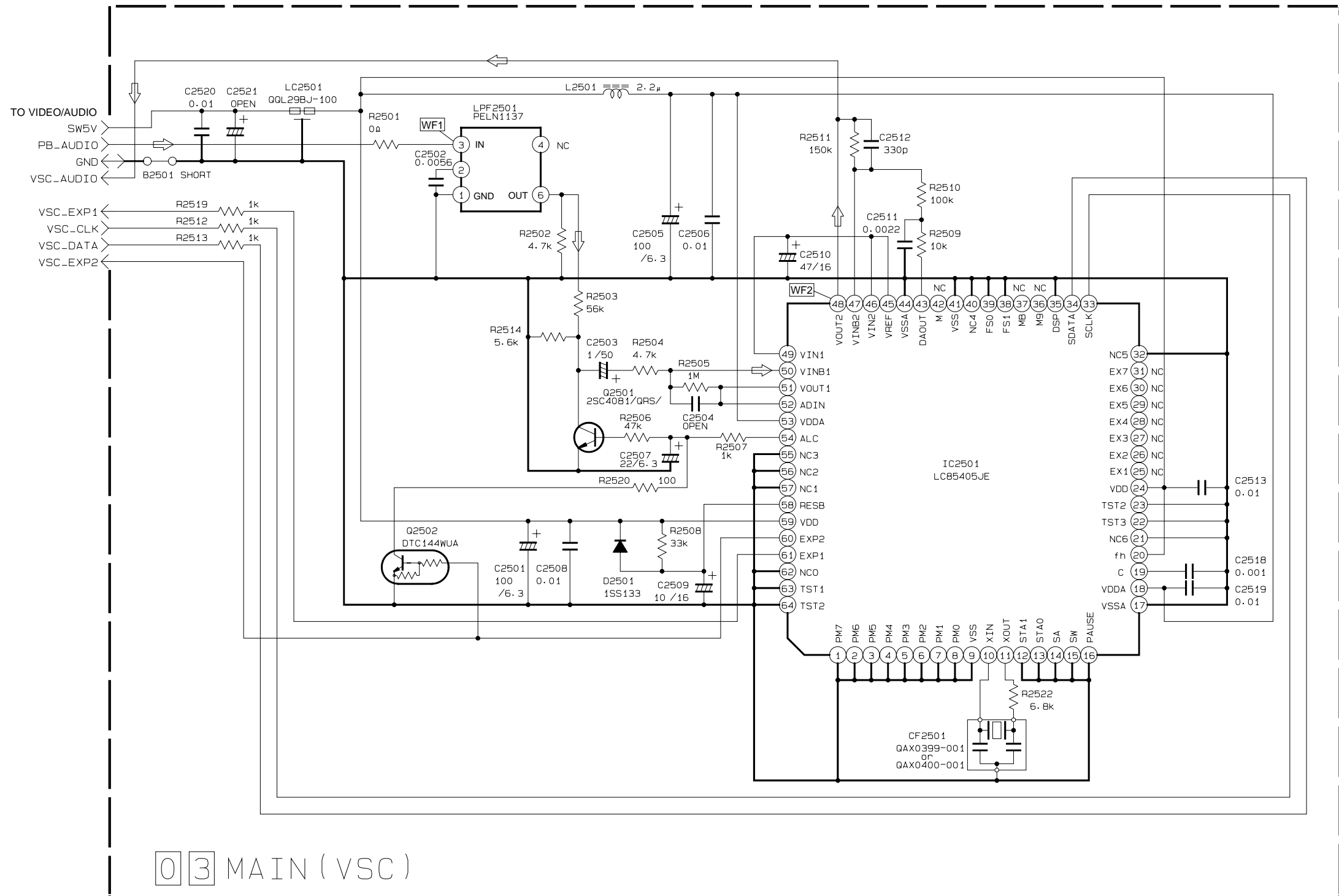


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Note : For the waveforms in this schematic diagram, refer to page 4-41.

4.3 VSC SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



Note : For the waveforms in this schematic diagram, refer to page 4-41.

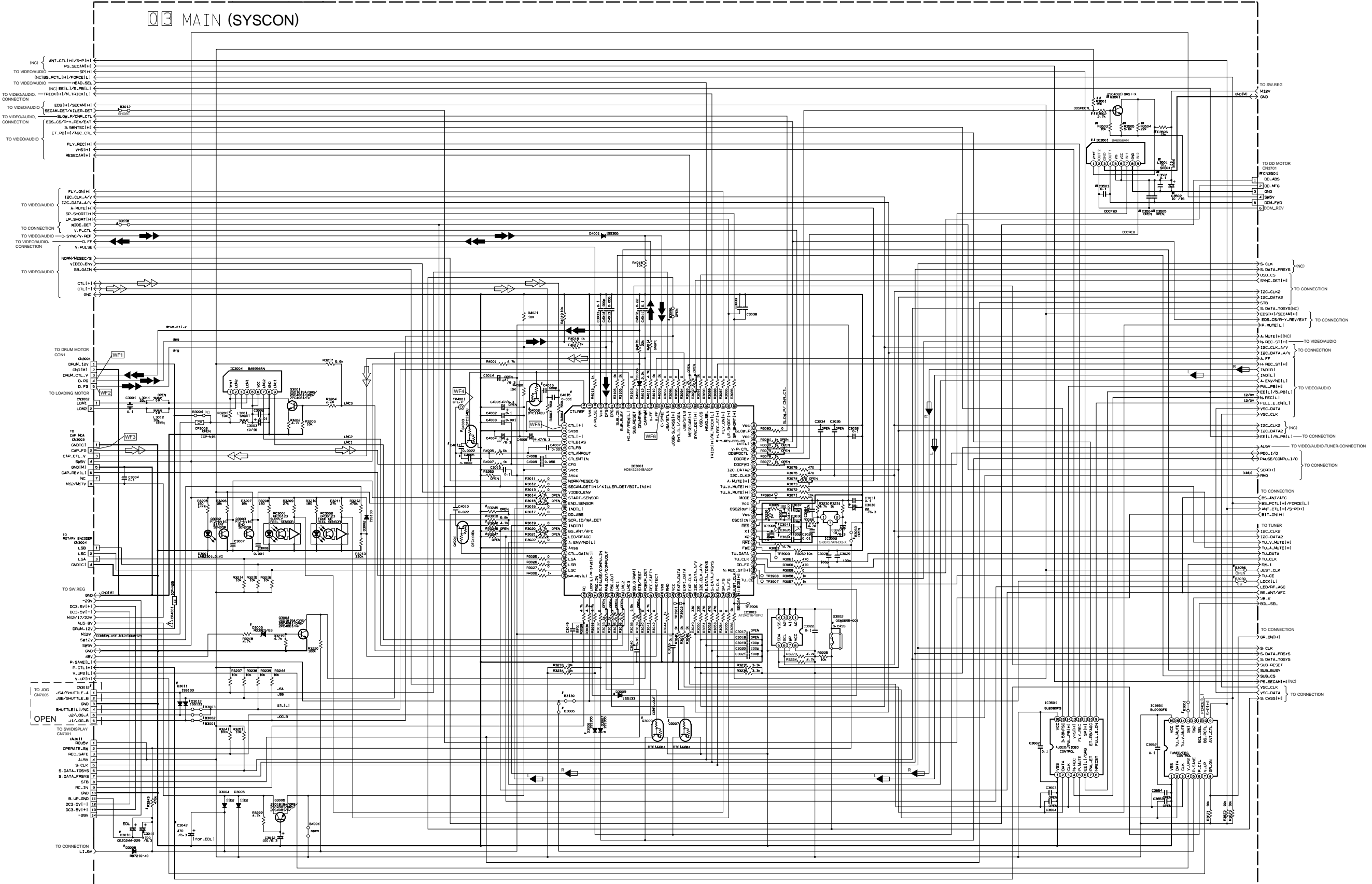
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NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

ELECTROLYTIC
 CERAMIC
 MYLER
 NON POLAR

4.4 SYSTEM CONTROL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



#DIFFERENCE TABLE
O : Used
X : Not used

BACKUP TIME	C3010	C3011	C3042	R3243	B3030	C3009	B3060
30MIN	X	X	X	X	X	X	X
10MIN	X	X	X	X	X	X	X
60MIN	X	X	X	X	X	X	X
BATT	X	X	X	X	X	X	X
FULL P.SAVE	X	X	X	X	X	X	X

US/CTL TYPE	C3010	C3011	C3042	R3243	B3030	C3009	B3060
43RF-J-V/S	X	X	X	X	X	X	X
J/S	X	X	X	X	X	X	X
OTHER	X	X	X	X	X	X	X

FEATURE TYPE	C3010	C3011	C3042	R3243	B3030	C3009	B3060
TV-LINK(PH)	X	X	X	X	X	X	X
R.PAUSE	X	X	X	X	X	X	X
AV-ED11	X	X	X	X	X	X	X
AV-COMPU	X	X	X	X	X	X	X

BACK-CLK ADJ	C3010	C3011	C3042	R3243	B3030	C3009	B3060
ADJ	X	X	X	X	X	X	X
FTX	X	X	X	X	X	X	X

MECH. TYPE	C3010	C3011	C3042	R3243	B3030	C3009	B3060
Y29-2	X	X	X	X	X	X	X
Y29-1	X	X	X	X	X	X	X
Y29-11SEP	X	X	X	X	X	X	X

NOTES: UNLESS OTHERWISE SPECIFIED:
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN P.F.

MECH. TYPE	C3010	C3011	C3042	R3243	B3030	C3009	B3060
Y29-2	X	X	X	X	X	X	X
Y29-1	X	X	X	X	X	X	X
Y29-11SEP	X	X	X	X	X	X	X

Note : For the waveforms in this schematic diagram, refer to page 4-41.

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4.5 SWITCHING REGULATOR SCHEMATIC DIAGRAM

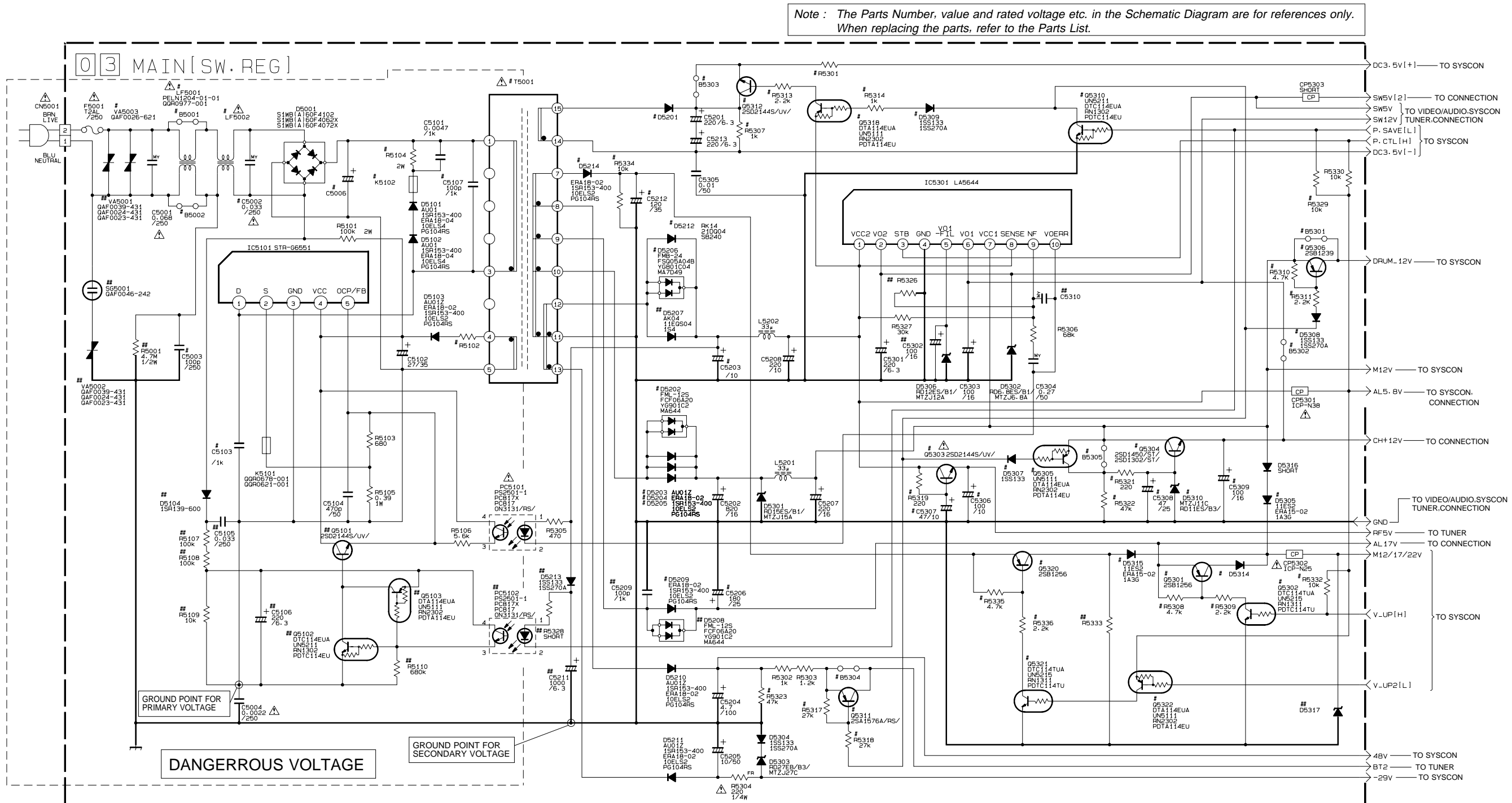
5

4

3

2

1



DIFFERENCE TABLE 1

	D5202	D5203 D5204 D5205	D5206	D5212	D5203
D25	EU/EK/MS/A/M	NO	YES	NO	YES
S1	EU/EK	YES	NO	YES	NO
	MS	YES	NO	YES	NO
	A	YES	NO	YES	NO
	UM/M/EN/K	NO	YES	YES	NO
S2	EU/EK/MS	YES	NO	YES	NO
S25 S36	EU/EK/MS	YES	NO	YES	NO

DIFFERENCE TABLE 5

	R5104	C5003	C5103	C5107	K5102
PHILIPS /75	68k	YES	33p	NO	SHORT
PHILIPS /78	68k	YES	100p	YES	YES
OTHER	150k	NO	33p	NO	SHORT

DIFFERENCE TABLE 2

	LF5001	LF5002	C5002	C5006	B5001	B5002
AC INPUT 220-240V (CE)	YES	QGR0978-001 QGR0608-001 QGR0609-001 QGR0610-001	YES	68/400	NO	
AC INPUT 110-240V (OTHER)	NO	QGR0932-001 QGR0933-001 QGR0915-001 QGR0927-001 QGR0916-001	NO	82/400	YES	

DIFFERENCE TABLE 7

	Q5301 Q5302 Q5209 Q5206	R5308 R5309 R5332	D5305	D5314	D5315	Q5320 Q5321 Q5322 Q5214	T5001	R5102
HIGH SPEED FF/REW	YES	YES	YES	NO	NO	NO	QGS0052-001	4.7
NO	NO	SHORT	NO	NO	NO	NO	QGS0052-001	4.7
100s 65s	YES	YES	SHORT	NO	NO	NO	QGS0057-001	33
S1-S2	YES	YES	SHORT	YES	YES	YES	QGS0057-001	39
S25-S36	YES	YES	SHORT	YES	YES	YES	QGS0057-001	39

DIFFERENCE TABLE 3

	CH+12V	B5302	Q5304 Q5310 Q5307	R5322 R5303 R5309
YES	NO	YES		
NO	YES	NO		

DIFFERENCE TABLE 8

	VA5003
JVC	NO
PHILIPS	YES

DIFFERENCE TABLE 9

	Q5303 Q5306 R5319 Q5307
UM/M/EN	NO
OTHER	YES

DIFFERENCE TABLE 4

	P.SAVE	B5303 B5304	Q5305 Q5310 Q5311 Q5312	Q5318 Q5307 Q5316	R5323 R5324 R5325	B5301	Q5306 Q5308 Q5310 Q5311	B5305
FF/REW 65s	NO		YES			NO	YES	NO
OTHER	NO		YES			YES	NO	NO
NO	YES		NO			YES	NO	YES

DIFFERENCE TABLE 5

		R5301	D5201
LEVEL IND YES	EU/EK/MS	1	AK04 11E0504 1A36
	OTHER	SHORT	
LEVEL IND NO		SHORT	

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

— ELECTROLYTIC
— CERAMIC
— MYLER
— NON POLAR

p20169001a_rev1
MARK ELEMENTS ARE NOT MOUNTED

A

B

C

D

4-11

4-12

E

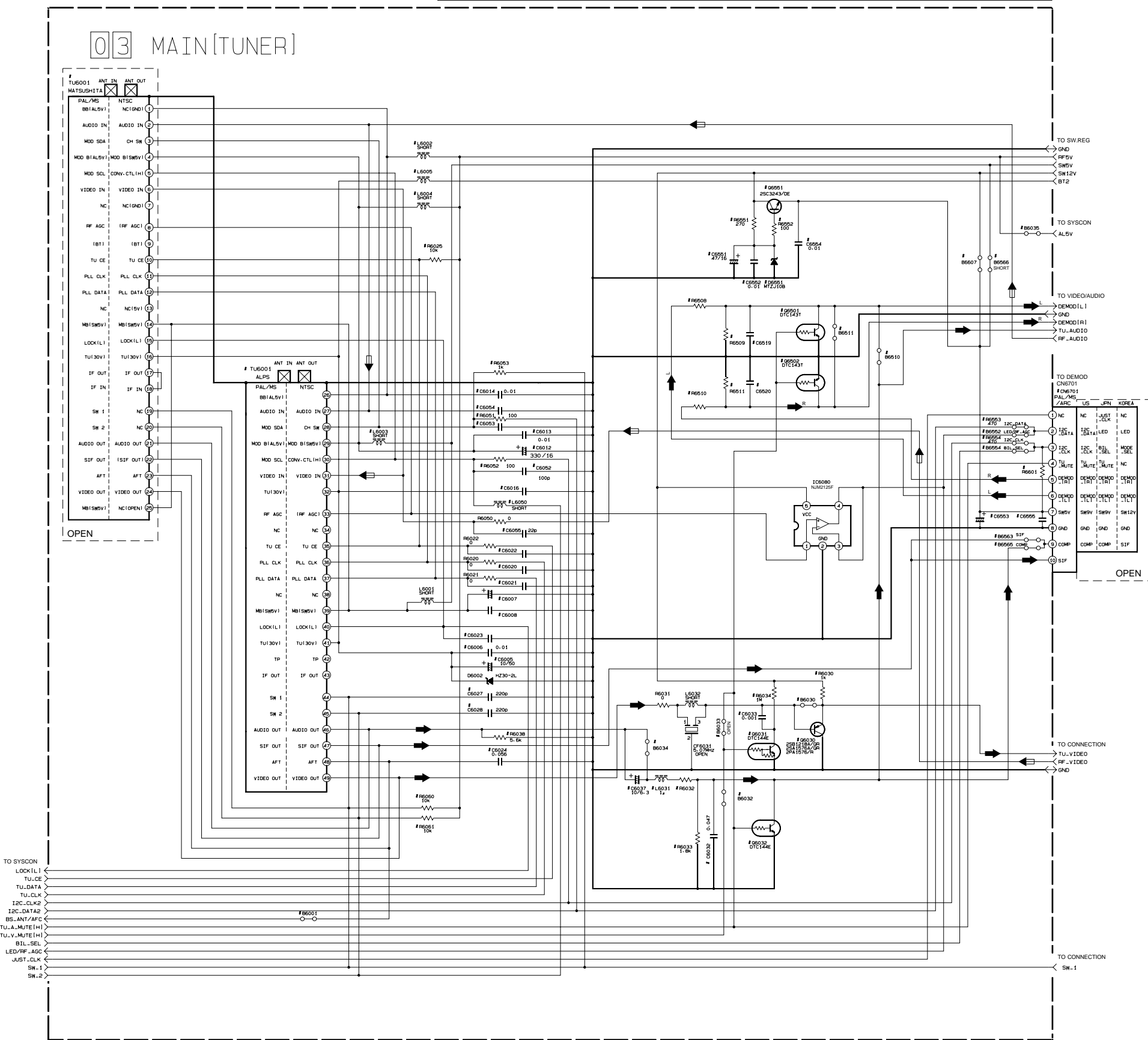
F

G

H

4.6 TUNER SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



O : Used
X : Not used

DIFFERENCE TABLE

TUNER	SYMBOL	US/AM/ PAL-M/PAL-N		JAPAN		KOREA (K2)		FRANCE MS		EU/EK		ARC	
		MATSU SHITA	ALPS	MATSU SHITA	SANYO	MATSU SHITA	LG	ALPS	ALPS	ALPS	MATSU SHITA	3SYSTEM	4SYSTEM
TUNER UNIT	TU6001	GAU0170	GAU0163	GAU0169	GAU0158	GAU0126	GAU0175	GAU0152	GAU0151	GAU0151	GAU0111		
ATS+	IC6080	X	X	X	X	X	O	O	O	O	X	X	X
VIDEO BUFFER	RE630-RE630	O	X	O	O	O	O	O	O	O	O	O	O
TU.V.MUTE	RE630	X	O	X	X	X	X	X	X	X	X	X	X
TU.A.MUTE	RE631	X	X	X	X	X	X	O	O	O	X	X	X
	RE634	X	X	X	X	X	X	X	X	X	X	X	X
	RE633-RE632	X	X	X	X	X	O	O	O	O	X	X	X
	RE632	X	X	X	X	X	O	O	O	O	O	O	O
AUDIO OUT	RE631	SHORT	SHORT	SHORT	SHORT	X	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT
	RE632	12k	12k	0	0	X	2-7k	3-3k	3-3k	3-3k	3-3k	3-3k	3-3k
	RE633	12k	12k	X	X	X	1-8k	1-8k	1-8k	1-8k	1-8k	1-8k	1-8k
	RE634	O	O	O	O	X	X	X	X	X	X	X	X
	RE637	X	X	X	X	X	O	O	O	O	O	O	O
	RE601	O	O	X	X	O	O	O	O	O	O	O	O
AFC	RE624	X	X	X	X	O	X	X	X	X	X	X	X
CENELEC	RE604	X	X	X	X	O	X	X	X	X	X	X	X
TU 30V	RE605	X	X	X	X	X	X	X	X	X	X	X	X
	RE606	X	X	X	X	X	O	O	O	O	O	O	O
MBISWV1	RE607	X	X	X	X	X	200V/6-3V	200V/6-3V	200V/6-3V	200V/6-3V	200V/6-3V	200V/6-3V	200V/6-3V
	RE608	X	X	X	X	X	O	O	O	O	O	O	O
MOD B1SV1	RE612-RE613	X	X	X	X	X	X	X	O	O	O	O	O
	RE603	O	O	O	O	O	X	X	X	X	X	X	X
MOD B130V1	RE604	X	X	X	X	X	X	X	O	O	O	O	O
	RE616	X	X	X	X	X	O	O	O	O	O	O	O
BB1SV1	RE614-RE615	X	X	X	X	X	O	O	O	O	O	O	O
PLL CLK	RE620	X	X	X	X	X	X	X	X	X	X	X	X
PLL DATA	RE621	X	X	X	X	X	X	X	X	X	X	X	X
TU CE	RE622	X	X	X	X	X	X	X	X	X	X	X	X
LOCK	RE623	X	X	X	X	X	X	X	O	X	X	X	X
MOD SDA /CH SW	RE653	O	O	O	O	O	X	X	X	X	X	X	X
	RE651	X	X	X	X	X	X	X	O	O	O	O	O
	RE653	X	X	X	X	X	X	X	X	X	X	X	X
MOD SCL /CONV. CTL	RE652-RE651	X	X	X	X	X	X	X	X	X	X	X	X
	RE652	X	X	X	X	X	X	X	X	X	X	X	X
	RE651	O	O	O	O	O	X	X	X	X	X	X	X
SYSTEM SW	RE627-RE628	X	X	X	X	X	X	O	X	X	X	X	X

DEM0	SYMBOL	NTSC		PAL/MS/ARC	
		US MTS	JAPAN MTS	KOREA MTS	MONO
DEM0 PMB ADD Y	RE6701	RE61076*	RE61067*	RE61091*	---
9V REG	RE651-RE652 RE651-RE651	O	O	X	X
SW12V	RE653-RE654	X	X	X	X
DEM0 OUT	RE657	X	X	O	X
	RE658-RE659	0	0	5-8k	0
	RE659-RE651	X	X	5-8k	X
	RE619-RE620	X	X	0-022F	X
MUTE	RE601-RE602	O	X	O	X
TUNER MONO	RE610-RE611	X	X	X	X
	RE653-RE654	470	X	X	X
DEM0 SELECTION	RE652-RE654	X	O	O	X
	RE653	X	X	O	X
	RE655	O	O	X	O

SW1	FRANCE MS	NTSC		MULTI SYSTEM (MATSUSHITA)				MULTI SYSTEM (ALPS)			
		OPEN	L10V1	BG	I	DK	M	BG	I	DK	M
SW1	SECAM(H)	US3/US	US4/US	OPEN	OPEN	L10V1	L10V1	L10V1	H15V1	L10V1	H15V1
SW2	SECAM-VL(H)	CONV.ON	CONV.OFF	OPEN	OPEN	L10V1	OPEN	L10V1	L10V1	H15V1	H15V1

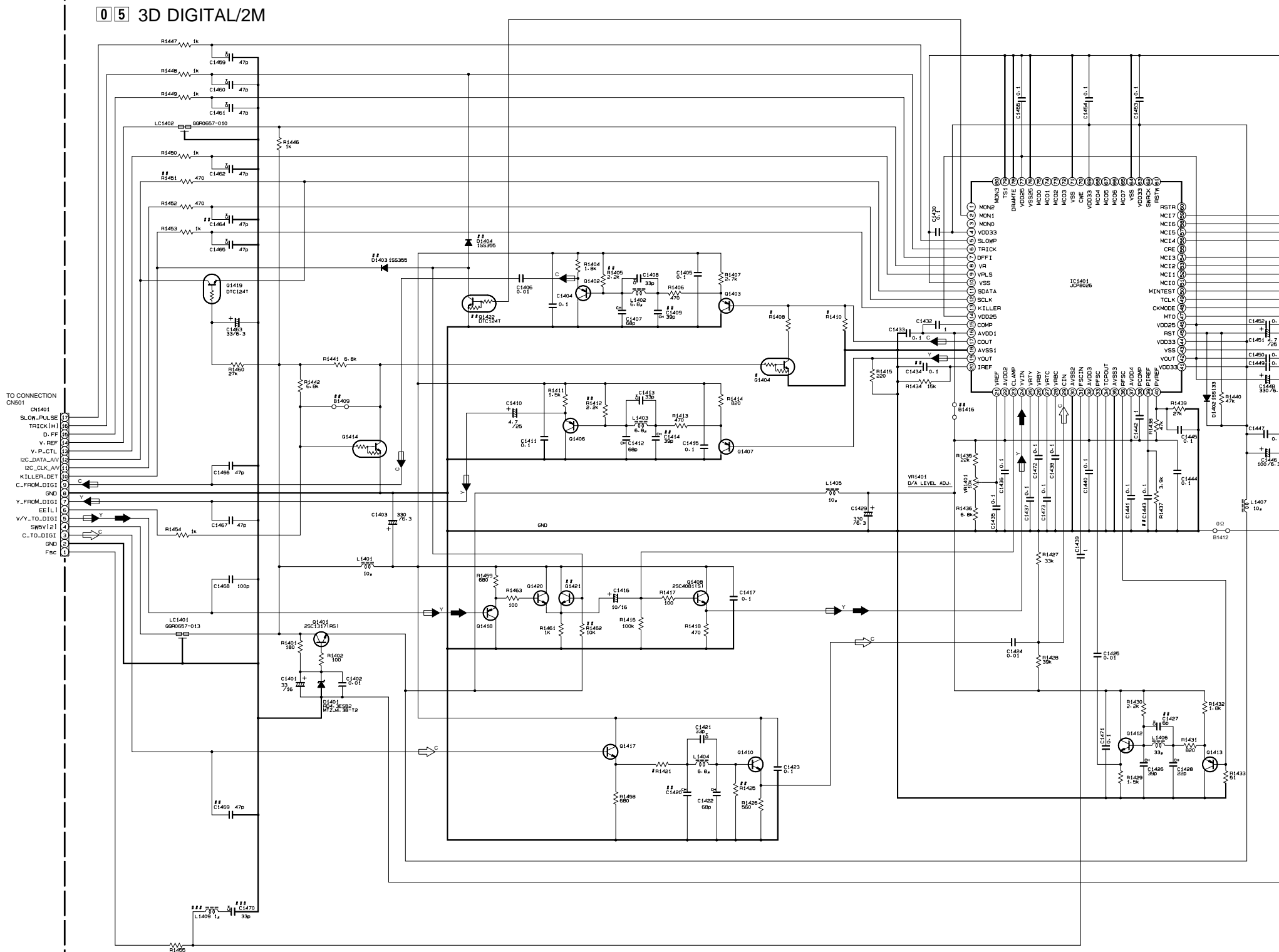
SYSTEM	EU/EE/EA		EK/ES	
	BG/DK	I		

NOTES: UNLESS OTHERWISE SPECIFIED,
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN P.F.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p10284001a_rev1





4.8 3D DIGITAL/2M SCHEMATIC DIAGRAM

*Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.*



p10276001a_rev0.1

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

	ELECTROLYTIC
	CERAMIC
	MYLER
	NON POLAR

```
## MARK ELEMENTS ARE NOT MOUNTED.
ALL SINGLE DIODE:1SS133 OR 1N4148.
ALL PNP TRANSISTOR:2SA1576A(QR) OR 2SB1218A(QR) OR 2PA1576(R)
ALL NPN TRANSISTOR:2SC4081(QRS) OR 2SD1819A(QRS) OR 2PC4081(R)
ALL NPN DIGITAL TRANSISTOR:OTC144WUA OR UN521E OR RN1309
```

Marked elements may differ depending on the model.
Be sure to check the Parts List.

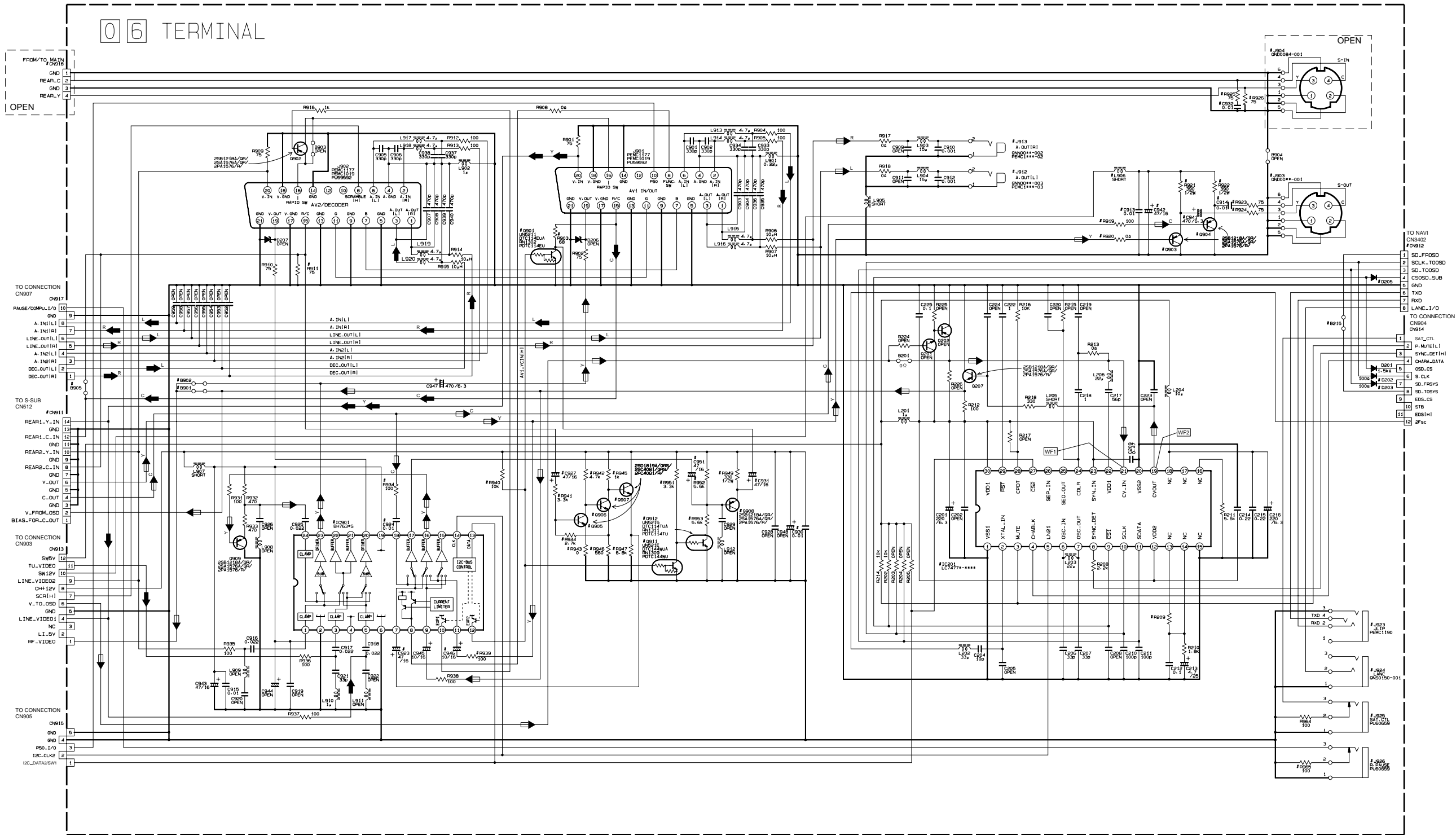
DIFFERENCE TABLE

O : Used
x : Not used

	G1404	R1408	R1410	R1421	
PAL/MS	○	1.2k	390	390	
NTSC	×	OPEN	240	330	

4.9 TERMINAL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



# DIFFERENCE TABLE		O : Used X : Not used													
MODELS	SYMBOLS	8900	8901	8902	8903	8904	8905	8906	8907	8908	8909	8910	8911	8912	8913
V13536 EU/EK		O	X	X	6-9791	12k	X	O	X	B5	21/126	O	O	O	O
V13536 MS		O	X	X	5-9750	5.1k	X	O	X	B5	21/126	O	O	O	O
V13536 EU(Philips)		O	X	X	6-9791	12k	X	O	X	B4	23/009	X	O	X	O
V13536 EU/EK		O	X	X	6-9791	12k	X	O	X	B4	23/009	O	O	O	O
V13536 MS		O	X	X	5-9750	5.1k	X	O	X	B4	23/009	O	O	O	O
V1352/S22 EU/EK-S21 EU		O	X	X	6-9791	12k	O	X	X	B4	23/009	X	X	O	O
V1352 EU/EK(Philips)		O	X	X	5-9750	5.1k	O	X	X	B4	23/009	X	X	X	O
V13536 MS		O	X	X	5-9750	5.1k	O	X	X	B4	23/009	X	X	O	O
V1352 MS(Philips)		O	X	X	5-9750	5.1k	O	X	X	B4	23/009	X	X	X	O
V1351 EU/EK-S11EU-S12EK		O	X	X	6-9791	12k	O	X	X	B4	23/009	X	X	X	O
V1351 MS		O	X	X	5-9750	5.1k	O	X	X	B4	23/009	X	X	X	O
V1302 EU/EK		X	O	X	6-9791	12k	X	O	X	X	23/009	O	O	O	O
V1302 MS		X	O	X	5-9750	5.1k	X	O	X	X	23/009	O	O	O	O

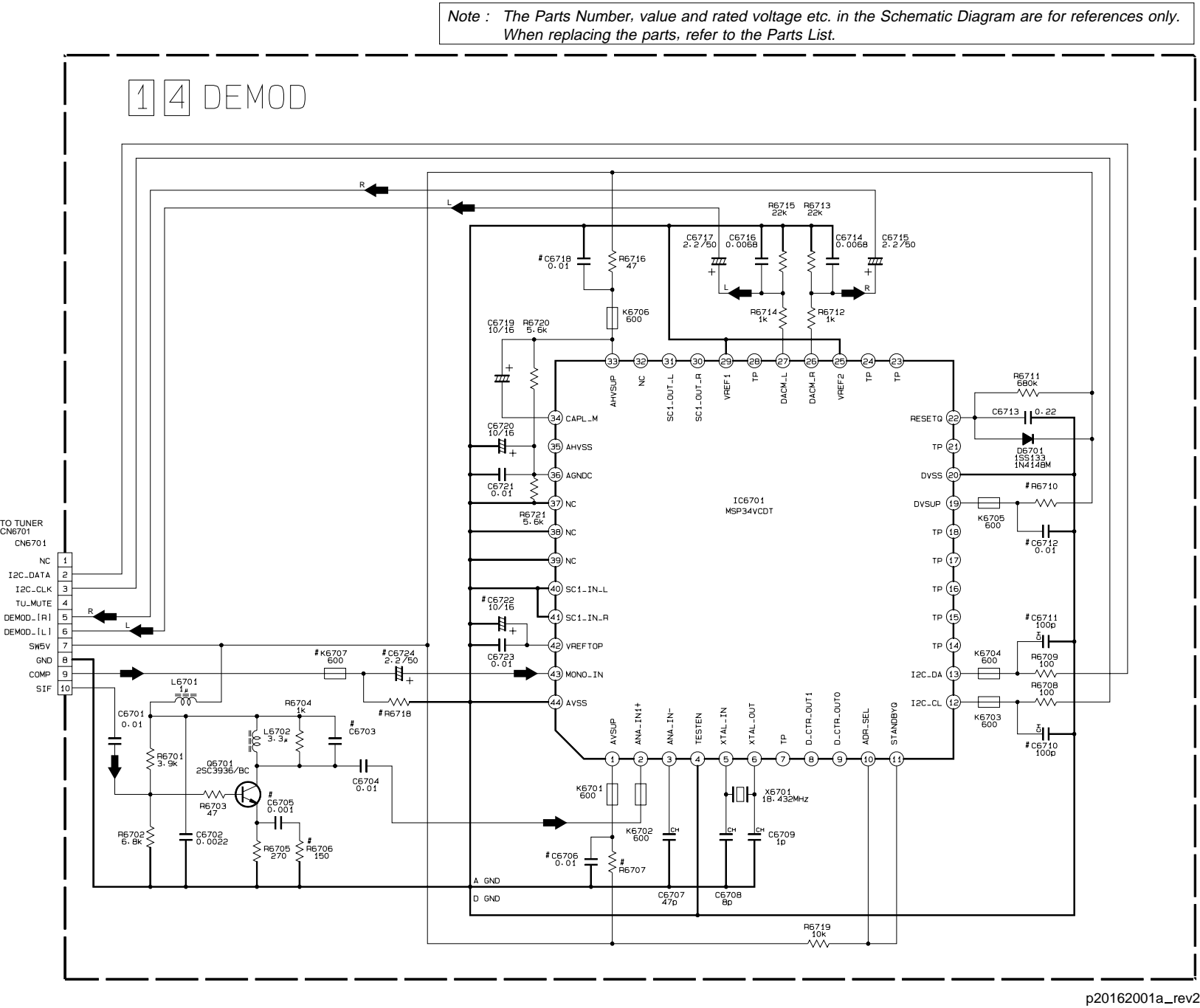
NOTES: UNLESS OTHERWISE SPECIFIED:
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN P.F.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

LAST NO	220	900	201, 206-207, 219-223	927-930, 948, 950, 954-963
R	220	900	201, 206-207, 219-223	927-930, 948, 950, 954-963
C	225	909	203, 221	949-950
D	207	204		
O	207	912	203-205	910
L	208	920		
B	215	905	202-214	
J		926		905-911, 914-922
IC	201	901		
CN	918			901-910, 916

Note : For the waveforms in this schematic diagram, refer to page 4-41.

p10275001a_rev0

4.10 DEMODULATOR SCHEMATIC DIAGRAM



DIFFERENCE TABLE
O : Used
X : Not used

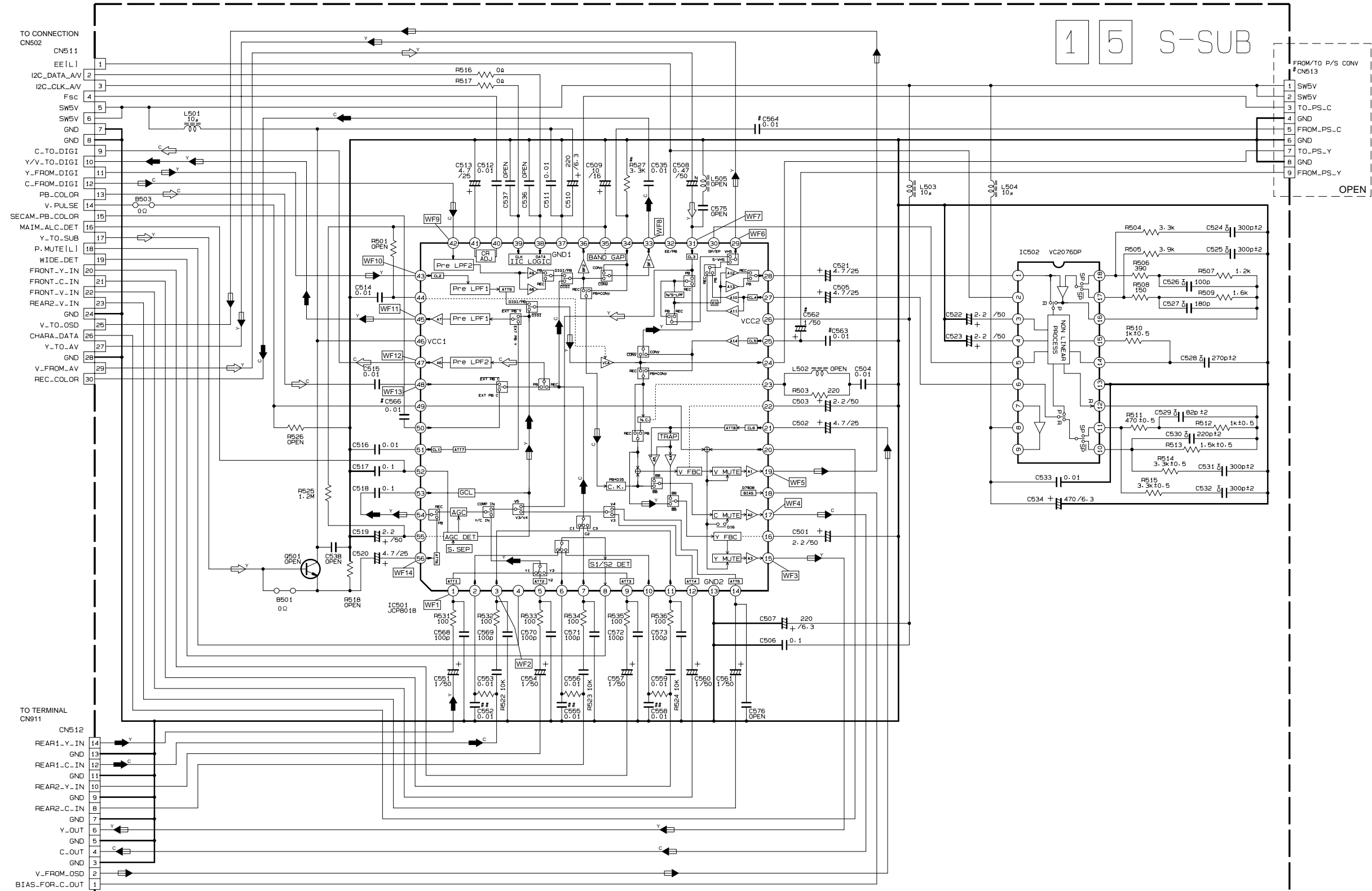
	SYMBOL	FRANCE MS	BASIC	ARC	
		STEP UP EU/EK	EU/EK	3SYSTEM	4SYSTEM
PRE AMP	R6706	O	O	X	X
	C6705	O	O	X	X
	C6703	X	X	180p	220p
MONO IN	C6724	O	X	X	X
	K6707	X	X	X	X
ANALOG Vcc	R6707	22	47	47	47
	C6706	X	X	X	X
I2C_bus	C6710	X	X	X	X
	C6711	X	X	X	X
DIGITAL Vcc	R6710	10	12	12	12
	C6712	X	X	X	X
DAC Vcc	C6718	X	X	X	X
	C6722	X	X	X	X

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

⊕
⊖
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.11 S-SUB SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



Note : For the waveforms in this schematic diagram, refer to page 4-41.

p20168001a_rev0

# DIFFERENCE TABLE		
	CN513 C562 C564 C566	C563 R527
MS	○	×
OTHERS	×	○

○ : Used
x : Not used

Marked elements may differ depending on the model.
Be sure to check the Parts List.

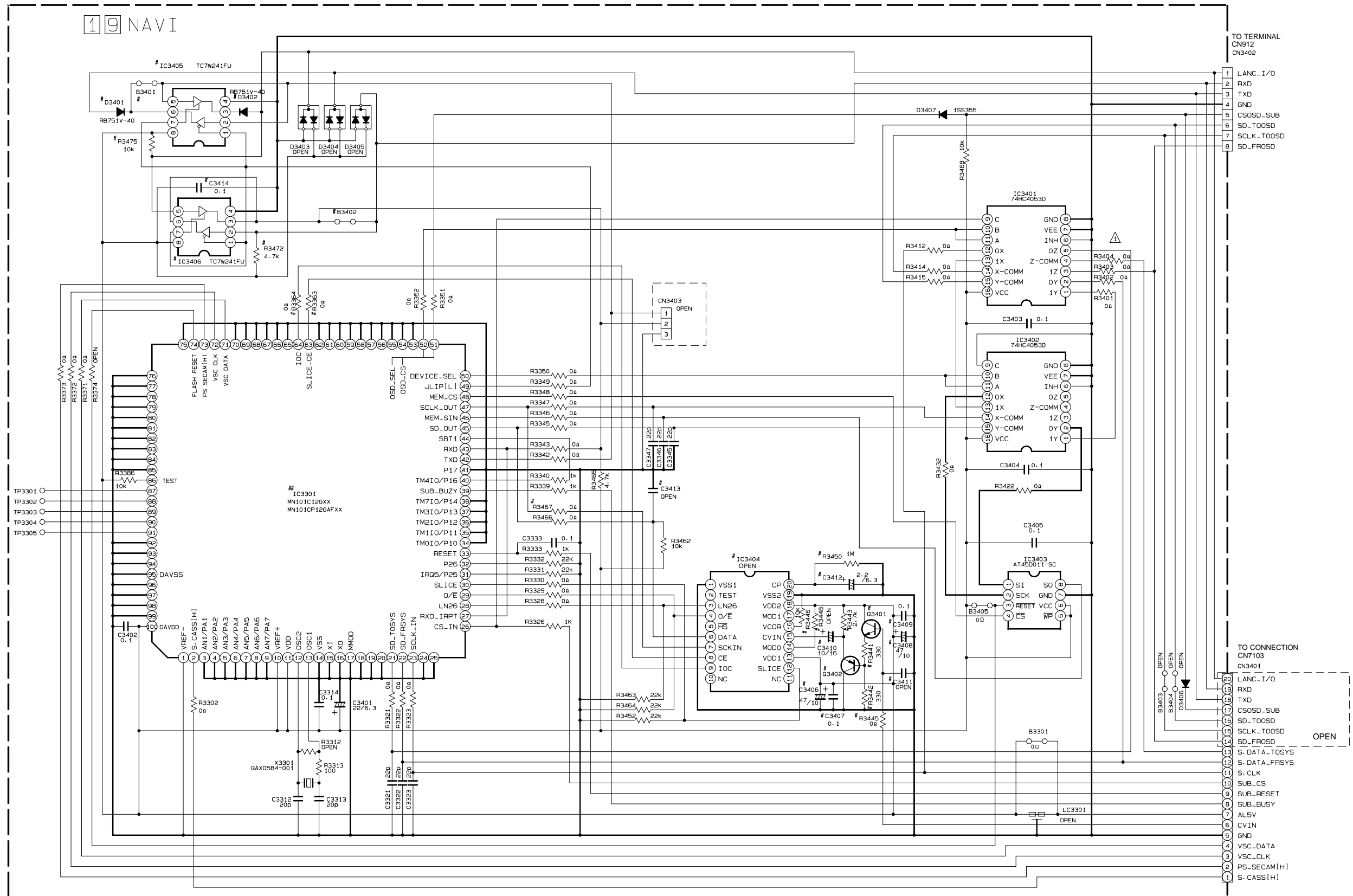
NOTES: UNLESS OTHERWISE SPECIFIED,
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

⏏ ELECTROLYTIC
⏏ CERAMIC
⏏ MYLAR
⏏ NON POLAR

4.12 NAVIGATION SCHEMATIC DIAGRAM [LPB10108-001*]

There are currently two types of Navigation boards in used, these are the LPB10108-001 and the LPB10108-002*. These two boards have different Schematic Diagrams and Parts Lists. Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.*

*Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.*



p20167001a_rev1





# DIFFERENCE TABLE ○ : Used × : Not used		
LANC	WITH LANC	WITHOUT LANC
IC3405, C3414 IC3406, D3402 R3472, R3475	○	×

ALL SET	WITH ALL SET	WITHOUT ALL SET
Q3401, Q3402 C3406-C3413 R3363, R3364 R3441, R3450 R3467 IC3404	○	×

JLIP	WITH JLIP	WITH JLIP WITHOUT LANC
D3401	○	○
B3401 B3402	×	○

IC3301 ROM CODE	MODEL
CC	HR-S9B00U
CD	PHILIPS US, UM, M, K
CE	PHILIPS /55, /75, /77, HR-VXG300
CG	JVC EU, EK, MS, YR1600/58

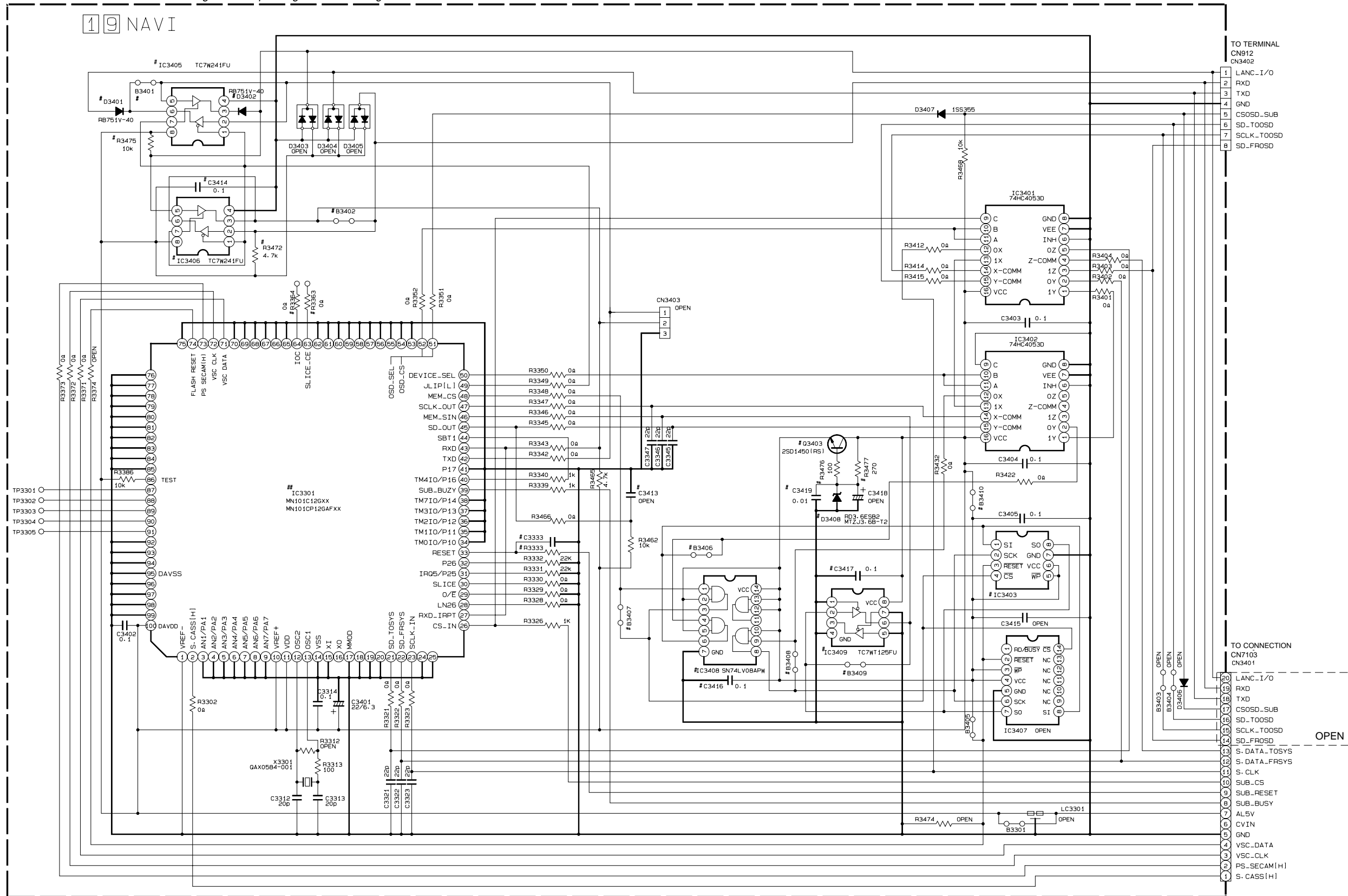
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF .

	ELECTROLYTIC
	CERAMIC
	MYLER
	NON POLAR

4.13 NAVIGATION SCHEMATIC DIAGRAM [LPB10108-002*]

There are currently two types of Navigation boards in used, these are the LPB10108-001* and the LPB10108-002*. These two boards have different Schematic Diagrams and Parts Lists. Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.

*Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.*



p20167002a_rev0

```
# DIFFERENCE TABLE
O : Used
x : Not used
```





IC3403			AT450011-SC	AT450B011-SC
IC340B D340B C3416	IC3409 R3476 C3417	G3403 R3477 C3419	×	○
B3406-B3410			○	×
R3333			1k	330
C3333			0.1μF	4.7kΩ

LANC	WITH LANC	WITHOUT LANC
IC3405, C3414 IC3406, D3402 R3472, R3475	○	×

JLIP	WITH JLIP	WITH JLIP WITHOUT LANC
D3401	○	○
B3401 B3402	×	○

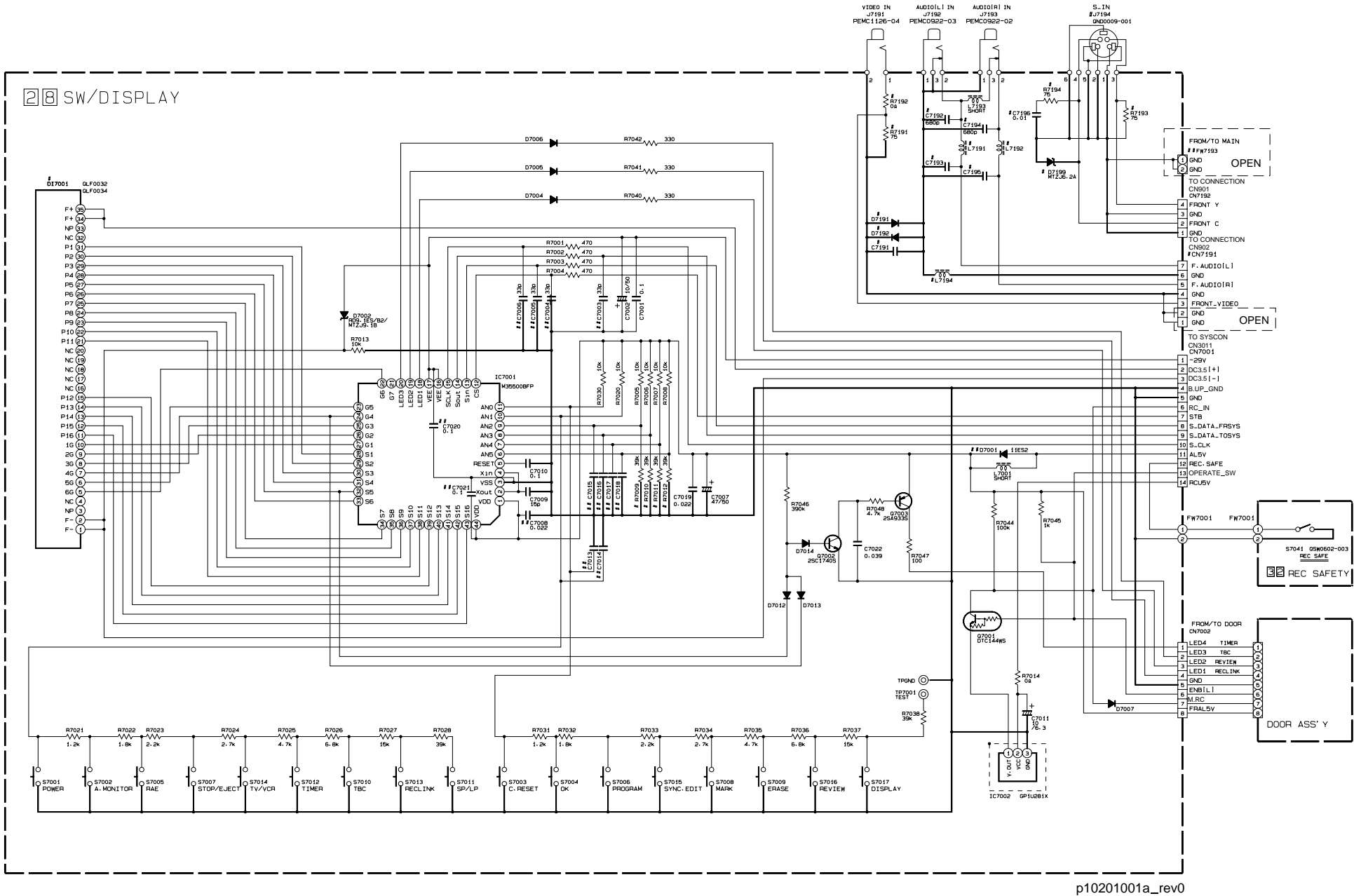
IC3301 ROM CODE	MODEL
CC	HR-S9800U
CD	PHILIPS US. UM. M. K
CE	PHILIPS /55- /75- /77- HR-VXG300
CG	JVC EU. EK. MS. VR1600/58

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μ F.

	ELECTROLYTIC
	CERAMIC
	MYLER
	NON POLAR

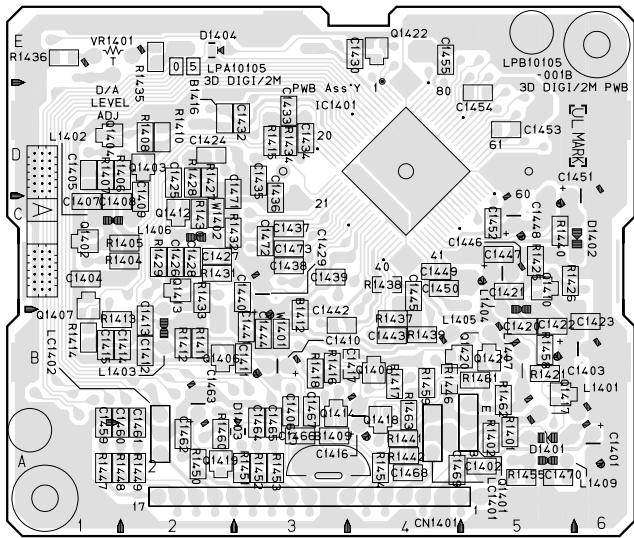
4.14 SW/DISPLAY AND REC SAFETY SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.
When replacing the parts, refer to the Parts List.



4.15 3D DIGITAL/2M AND S-SUB CIRCUIT BOARDS

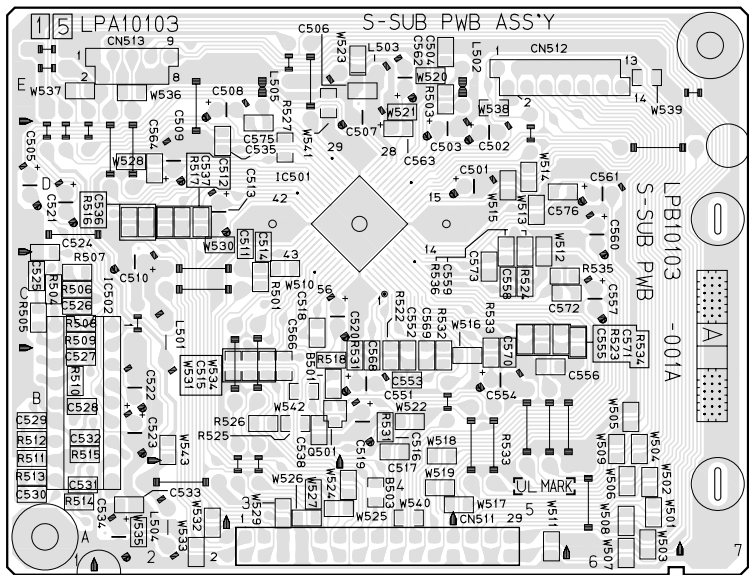
<05>3D DIGITAL/2M
LPB10105-001B



COMPONENT PARTS LOCATION GUIDE
<3D DIGITAL/2M >

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR				TRANSISTOR			
C1401	A	D	6A	C1446	A	D	5C
C1402	A	B	5A	C1447	A	D	5C
C1403	A	B	5A	C1448	A	D	5C
C1404	A	B	5A	C1449	A	D	5C
C1405	A	B	5A	C1450	A	D	5C
C1406	A	B	5A	C1451	A	D	5C
C1407	A	B	5A	C1452	A	D	5C
C1408	A	B	5A	C1453	A	D	5C
C1409	A	B	5A	C1454	A	D	5C
C1410	A	B	5A	C1455	A	D	5C
C1411	A	B	5A	C1456	A	D	5C
C1412	A	B	5A	C1457	A	D	5C
C1413	A	B	5A	C1458	A	D	5C
C1414	A	B	5A	C1459	A	D	5C
C1415	A	B	5A	C1460	A	D	5C
C1416	A	B	5A	C1461	A	D	5C
C1417	A	B	5A	C1462	A	D	5C
C1418	A	B	5A	C1463	A	D	5C
C1419	A	B	5A	C1464	A	D	5C
C1420	A	B	5A	C1465	A	D	5C
C1421	A	B	5A	C1466	A	D	5C
C1422	A	B	5A	C1467	A	D	5C
C1423	A	B	5A	C1468	A	D	5C
C1424	A	B	5A	C1469	A	D	5C
C1425	A	B	5A	C1470	A	D	5A
C1426	A	B	5A	C1471	A	D	5A
C1427	A	B	5A	C1472	A	D	5A
C1428	A	B	5A	C1473	A	D	5A
C1429	A	B	5A	C1474	A	D	5A
C1430	A	B	5A	C1475	A	D	5A
C1431	A	B	5A	C1476	A	D	5A
C1432	A	B	5A	C1477	A	D	5A
C1433	A	B	5A	C1478	A	D	5A
C1434	A	B	5A	C1479	A	D	5A
C1435	A	B	5A	C1480	A	D	5A
C1436	A	B	5A	C1481	A	D	5A
C1437	A	B	5A	C1482	A	D	5A
C1438	A	B	5A	C1483	A	D	5A
C1439	A	B	5A	C1484	A	D	5A
C1440	A	B	5A	C1485	A	D	5A
C1441	A	B	5A	C1486	A	D	5A
C1442	A	B	5A	C1487	A	D	5A
C1443	A	B	5A	C1488	A	D	5A
C1444	A	B	5A	C1489	A	D	5A
C1445	A	B	5A	C1490	A	D	5A

<15>S-SUB
LPB10103-001A

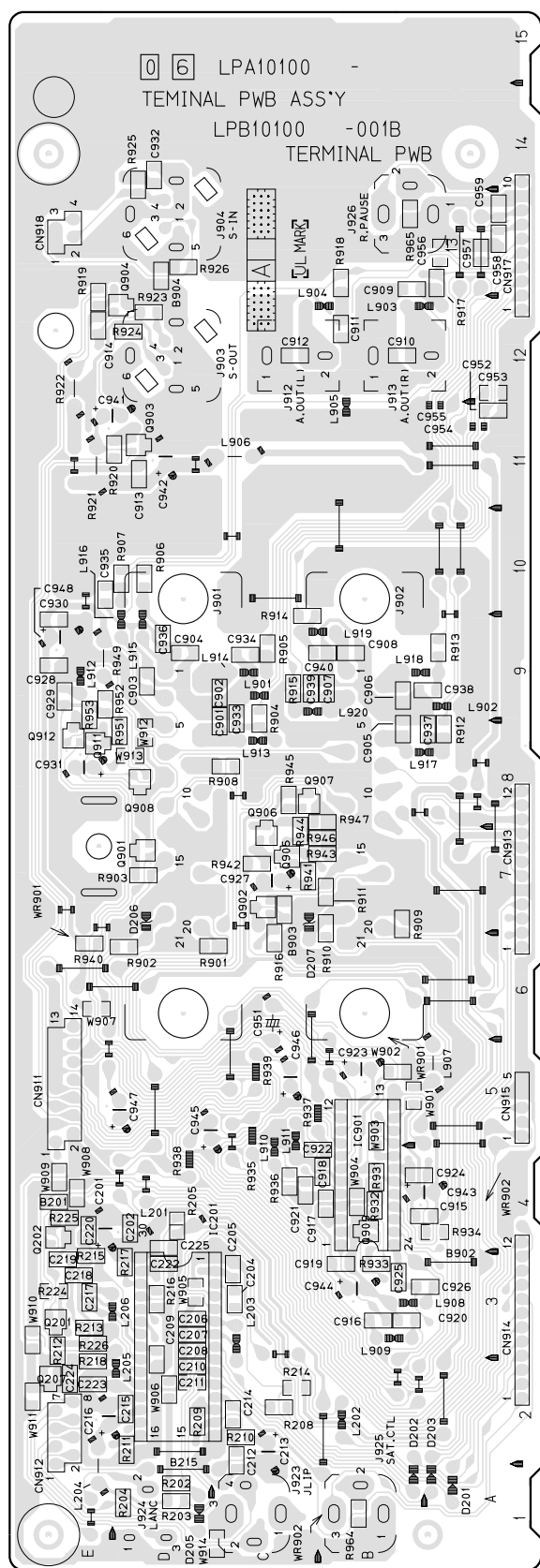


COMPONENT PARTS LOCATION GUIDE
<S-SUB >

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR				TRANSISTOR			
C501	A	D	5D	C553	A	D	5D
C502	A	D	5D	C554	A	D	5D
C503	A	D	5D	C555	A	D	5D
C504	A	D	5D	C556	A	D	5D
C505	A	D	5D	C557	A	D	5D
C506	A	D	5D	C558	A	D	5D
C507	A	D	5D	C559	A	D	5D
C508	A	D	5D	C560	A	D	5D
C509	A	D	5D	C561	A	D	5D
C510	A	D	5D	C562	A	D	5D
C511	A	D	5D	C563	A	D	5D
C512	A	D	5D	C564	A	D	5D
C513	A	D	5D	C565	A	D	5D
C514	A	D	5D	C566	A	D	5D
C515	A	D	5D	C567	A	D	5D
C516	A	D	5D	C568	A	D	5D
C517	A	D	5D	C569	A	D	5D
C518	A	D	5D	C570	A	D	5D
C519	A	D	5D	C571	A	D	5D
C520	A	D	5D	C572	A	D	5D
C521	A	D	5D	C573	A	D	5D
C522	A	D	5D	C574	A	D	5D
C523	A	D	5D	C575	A	D	5D
C524	A	D	5D	C576	A	D	5D
C525	A	D	5D	C577	A	D	5D
C526	A	D	5D	C578	A	D	5D
C527	A	D	5D	C579	A	D	5D
C528	A	D	5D	C580	A	D	5D
C529	A	D	5D	C581	A	D	5D
C530	A	D	5D	C582	A	D	5D
C531	A	D	5D	C583	A	D	5D
C532	A	D	5D	C584	A	D	5D
C533	A	D	5D	C585	A	D	5D
C534	A	D	5D	C586	A	D	5D
C535	A	D	5D	C587	A	D	5D
C536	A	D	5D	C588	A	D	5D
C537	A	D	5D	C589	A	D	5D
C538	A	D	5D	C590	A	D	5D
C539	A	D	5D	C591	A	D	5D
C540	A	D	5D	C592	A	D	5D
C541	A	D	5D	C593	A	D	5D
C542	A	D	5D	C594	A	D	5D
C543	A	D	5D	C595	A	D	5D
C544	A	D	5D	C596	A	D	5D
C545	A	D	5D	C597	A	D	5D
C546	A	D	5D	C598	A	D	5D
C547	A	D	5D	C599	A	D	5D
C548	A	D	5D	C600	A	D	5D
C549	A	D	5D	C601	A	D	5D
C550	A	D	5D	C602	A	D	5D
C551	A	D	5D	C603	A	D	5D
C552	A	D	5D	C604	A	D	5D

4.16 TERMINAL CIRCUIT BOARD

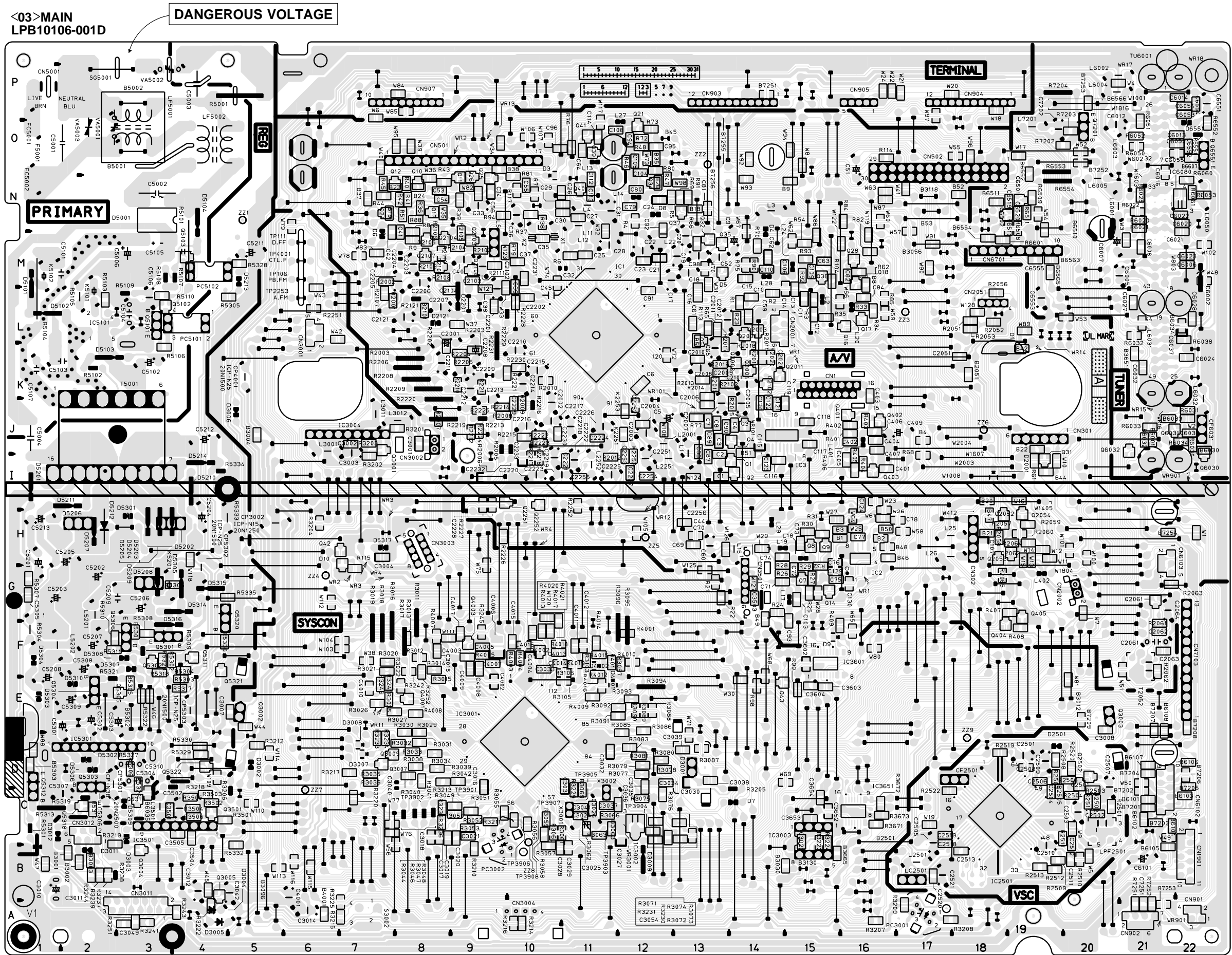
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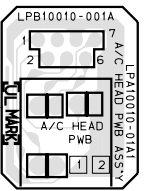
COMPONENT PARTS LOCATION GUIDE <TERMINAL>

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CAPACITOR				TRANSISTOR			
C901	A	D	4E	C937	B	C	8B
C902	A	D	4E	C938	B	C	8B
C903	A	D	4E	C939	B	C	8B
C904	A	D	4E	C940	B	C	8B
C905	A	D	4E	C941	B	C	8B
C906	A	D	4E	C942	B	C	8B
C907	A	D	4E	C943	B	C	8B
C908	A	D	4E	C944	B	C	8B
C909	A	D	4E	C945	B	C	8B
C910	A	D	4E	C946	B	C	8B
C911	A	D	4E	C947	B	C	8B
C912	A	D	4E	C948	B	C	8B
C913	A	D	4E	C949	B	C	8B
C914	A	D	4E	C950	B	C	8B
C915	A	D	4E	C951	B	C	8B
C916	A	D	4E	C952	B	C	8B
C917	A	D	4E	C953	B	C	8B
C918	A	D	4E	C954	B	C	8B
C919	A	D	4E	C955	B	C	8B
C920	A	D	4E	C956	B	C	8B
C921	A	D	4E	C957	B	C	8B
C922	A	D	4E	C958	B	C	8B
C923	A	D	4E	C959	B	C	8B
C924	A	D	4E	C960	B	C	8B
C925	A	D	4E	C961	B	C	8B
C926	A	D	4E	C962	B	C	8B
C927	A	D	4E	C963	B	C	8B
C928	A	D	4E	C964	B	C	8B
C929	A	D	4E	C965	B	C	8B
C930	A	D	4E	C966	B	C	8B
C931	A	D	4E	C967	B	C	8B
C932	A	D	4E	C968	B	C	8B
C933	A	D	4E	C969	B	C	8B
C934	A	D	4E	C970	B	C	8B
C935	A	D	4E	C971	B	C	8B
C936	A	D	4E	C972	B	C	8B

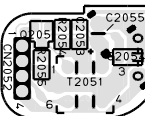
4.17 MAIN, A/C HEAD, AUDIO ERASE AND LOADING MOTOR CIRCUIT BOARDS



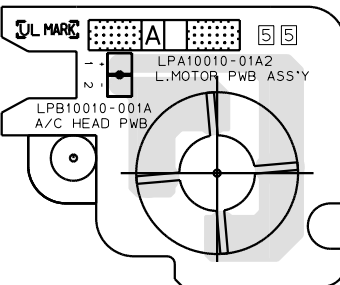
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LPB10010-001A



<46>AUDIO ERASE
LPB10106-001D



<55>LOADING MOTOR
LPB10010-001A

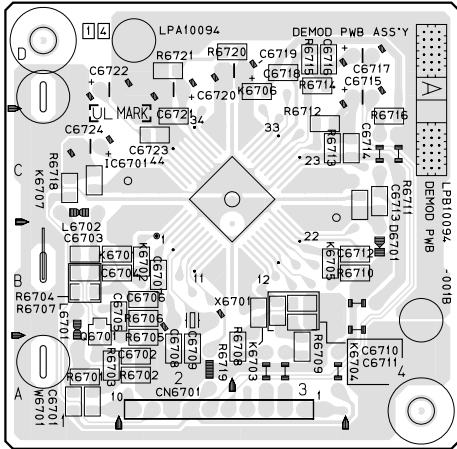


COMPONENT PARTS LOCATION GUIDE <MAIN>

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CAPACITOR																															
C1	B C	13I	C2001	A D	9K	C3041	B C	11C	CN3001	A D	6L	L2001	A D	12J	R2	B C	14L	R2107	B C	7L	R3085	B C	12D	R5322	B C	3F	C3				
C2	B C	13I	C2002	A D	10K	C3042	B C	11C	CN3002	A D	8J	L2251	A D	13I	R3	B C	15L	R2108	B C	8M	R3086	B C	12E	R5323	B C	3D	3D				
C3	B C	13J	C2003	A D	12J	C3049	B C	12C	CN3003	A D	8H	L2252	A D	11I	R4	B C	12N	R2109	B C	8M	R3087	B C	13D	R5326	B C	3D	3D				
C4	B C	14J	C2004	A D	12J	C3054	B C	12C	CN3004	A D	10A	L2501	A D	17B	R5	B C	12N	R2110	B C	8M	R3088	B C	12E	R5327	B C	3D	3D				
C5	A D	13J	C2005	A D	14J	C3501	A D	4C	CN3011	A D	2A	L3001	A D	6J	R6	B C	11M	R2111	B C	9M	R3089	B C	12E	R5328	B C	5M	4D				
C6	A D	13J	C2006	A D	13J	C3502	A D	4C	CN3012	A D	3C	L3011	A D	7J	R7	B C	10N	R2121	A D	8L	R3090	B C	12E	R5329	B C	4D	4D				
C7	B C	12K	C2007	A D	13J	C3503	B C	14G	CN3501	A D	14H	L3012	A D	7J	R8	B C	8M	R2202	B C	8K	R3091	B C	12E	R5330	B C	4D	4D				
C8	B C	13J	C2008	A D	13K	C3504	B C	4C	CN5001	A D	1P	L3501	A D	3C	R9	B C	8M	R2203	B C	9K	R3092	B C	12E	R5331	B C	5B	5B				
C9	B C	13J	C2009	B C	13K	C3505	B C	4C	CN6102	A D	21C	L5201	A D	2G	R21	B C	13G	R2204	B C	9K	R3093	B C	12E	R5333	B C	4D	4D				
C10	A D	14M	C2010	B C	13K	C3602	B C	15F	CN6103	A D	21H	L5202	A D	1F	R22	B C	13G	R2205	B C	9K	R3094	A D	12E	R5334	A D	5I	5I				
C11	B C	14L	C2011	A D	14L	C3603	B C	15E	CN7101	A D	18M	L6001	A D	20N	R23	B C	14L	R2206	A D	7K	R3095	A D	12F	R5335	B C	5G	5G				
C12	B C	15L	C2012	A D	13L	C3604	B C	15E	CN7103	A D	22E	L6002	A D	21P	R24	B C	14G	R2208	A D	8K	R3096	A D	12F	R5336	B C	4F	4F				
C13	B C	15L	C2013	B C	13K	C3652	B C	15C	DIODE										L6003	A D	21O	R25	B C	15G	R2209	B C	12F	R6020	B C	21N	21N
C14	B C	15L	C2021	B C	14K	C3653	B C	15C	D1	B C	19K	L6004	A D	20P	R26	B C	14G	R2210	B C	9K	R3103	B C	11F	R6021	B C	21N	21N				
C15	B C	15L	C2051	A D	18K	C3654	B C	15C	D3	B C	100	L6005	A D	20N	R27	B C	15G	R2211	B C	9K	R3105	B C	11F	R6022	B C	21N	21N				
C16	B C	14M	C2061	A D	21F	C4001	A D	6B	D4	B C	14M	L6031	B C	21L	R28	B C	14H	R2212	B C	9J	R3106	B C	11F	R6025	B C	21N	21N				
C17	A D	13L	C2062	B C	21F	C4002	A D	9E	D5	B C	13M	L6032	A D	22J	R29	B C	15G	R2213	A D	9J	R3201	B C	8J	R6030	B C	22J	22J				
C18	A D	12M	C2063	B C	21F	C4003	B C	9F	D6	A D	7N	L6050	A D	22N	R30	B C	15H	R2214	B C	9J	R3202	B C	7I	R6031	B C	22J	22J				
C19	A D	13M	C2064	A D	21G	C4004	B C	10F	D7	A D	13C	L7201	A D	19O	R31	B C	15H	R2215	A D	10J	R3203	B C	7J	R6032	B C	21J	21J				
C20	A D	13M	C2101	A D	14K	C4005	B C	9F	D8	A D	12N	TRANSISTOR										R32	B C	15G	R2216	A D	10J	R3204	B C	21J	21J
C21	A D	13M	C2102	A D	9M	C4006	B C	9F	D9	B C	15F	Q1	B C	14I	R33	B C	16L	R2217	B C	10I	R3205	A D	14C	R6034	B C	22J	22J				
C22	A D	12M	C2103	B C	9M	C4007	B C	9F	D10	B C	7H	Q2	B C	14J	R34	B C	16L	R2218	B C	10I	R3206	A D	5D	R6036	B C	22J	22J				
C23	A D	12M	C2104	B C	9L	C4008	B C	9F	D2001	B C	18I	Q3	B C	14J	R35	B C	15L	R2219	A D	9J	R3207	B C	16A	R6050	B C	21O	21O				
C24	B C	12M	C2121	A D	8L	C4009	B C	9F	D2121	A D	8L	Q4	B C	14J	R36	B C	8N	R2220	A D	9J	R3208	B C	17A	R6051	B C	21O	21O				
C25	B C	12M	C2201	B C	9L	C4010	B C	7E	D2201	A D	9M	Q5	B C	13L	R37	B C	10N	R2221	B C	10K	R3209	B C	17A	R6052	B C	21O	21O				
C26	B C	11M	C2202	A D	10L	C4011	B C	11F	D2501	A D	20D	Q7	B C	15G	R38	B C	10N	R2222	B C	10J	R3210	B C	9B	R6053	B C	22N	22N				
C27	B C	10M	C2203	A D	8M	C4012	B C	10F	D3001	A D	13D	Q8	B C	15H	R39	B C	9N	R2223	B C	10J	R3211	B C	9C	R6060	B C	22N	22N				
C28	B C	11M	C2204	A D	8M	C4013	B C	10F	D3002	A D	5D	Q9	B C	15H	R40	B C	8N	R2224	B C	9J	R3212	B C	5D	R6061	B C	22N	22N				
C29	A D	11M	C2205	A D	8M	C4014	B C	10F	D3003	A D	3B	Q10	B C	8N	R41	B C	8N	R2225	B C	9J	R3213	B C	8D	R6508	B C	19N	19N				
C30	B C	11M	C2206	A D	8M	C4015	B C	10F	D3004	A D	4A	Q11	B C	9N	R42	B C	8N	R2226	B C	9H	R3214	B C	10A	R6509	B C	19N	19N				
C31	A D	11M	C2207	A D	8L	C4016	B C	10F	D3005	A D	4A	Q12	B C	8N	R43	B C	8N	R2227	B C	9I	R3215	B C	7A	R6510	B C	19N	19N				
C32	A D	11M	C2208	A D	9K	C4017	B C	9F	D3006	A D	5J	Q13	B C	8N	R44	B C	7N	R2228	A D	10L	R3216	B C	10A	R6511	B C	19N	19N				
C33	A D	9N	C2210	A D	10K	C5001	A D	2O	D3007	B C	7D	Q14	B C	15G	R45	B C	7N	R2229	A D	10L	R3217	B C	7D	R6551	A D	22O	22O				
C34	B C	9N	C2211	A D	8K	C5003	A D	4P	D3008	B C	7D	Q16	B C	16L	R46	B C	12N	R2230	B C	10K	R3218	A D	4D	R6552	B C	22O	22O				
C35	B C	10M	C2212	A D	9K	C5004	A D	4J	D3009	A D	12B	Q17	B C	16L	R47	B C	12N	R2231	A D	9L	R3219	B C	2B	R6553	A D	20N	20N				
C36	A D	10M	C2213	A D	9J	C5006	A D	3M	D3011	A D	2B	Q18	B C	16M	R48	B C	12O	R2251	B C	6L	R3220	B C	7C	R6554	A D	20N	20N				
C37	B C	10M	C2214	A D	10K	C5101	A D	2M	D3012	A D	1C	Q21	B C	12O	R49	B C	8N	R2252	B C	11I	R3222	B C	4A	R6601	B C	18M	18M				
C38	A D	9L	C2215	A D	10K	C5102	A D	1K	D4001	B C	11E	Q24	B C	7N	R50	B C	15M	R2501	B C	20C	R3223	B C	15C	R7202	B C	20O	20O				
C39	B C	10M	C2216	A D	10J	C5103	A D	3K	D4002	B C	11F	Q25	B C	9N	R61	B C	19I	R2502	B C	20C	R3224	B C	15C	R7203	A D	20P	20P				
C40	A D	9M	C2217	A D	10J	C5104	A D	3L	D5001	B C	3N	Q26	B C	9N	R65	B C	16M	R2503	B C	20C	R3225	B C	7A	R7204	B C	19P	19P				
C41	B C	8M	C2218	A D	11J	C5105	A D	3M	D5101	A D	1L	Q28	B C	16M	R66	B C	13M	R2504	B C	20C	R3229	B C	11C	R7251	B C	21A	21A				
C42	B C	7M	C2219	A D	10J	C5106	A D	3L	D5102	A D	2L	Q31	B C	19I	R68	B C	17I	R2505	B C	20D	R3230	B C	12C	R7252	B C	21A	21A				
C43	A D	13H	C2220	A D	10I	C5107	A D	1K	D5103	A D	2K	Q32	B C	13M	R69	B C	13N	R2506	B C	19D	R3233	B C	7D	TESTPOINT							
C44	A D	10L	C2221	B C	11I	C5201	A D	1G	D5201	A D	1I	Q35	B C	12M	R70	B C	14M	R2507	B C	19D	R3234	B C	7D	TP106	A D	6M	6M				
C45	A D	16M	C2222	A D	11I	C5202	A D	2G	D5202	A D	4H	Q37	B C	13N	R72	B C	12O	R2508	B C	19B	R3235	B C	8C	TP111	A D	6M	6M				
C46	A D	13M	C2223	A D	11I	C5203	A D	1G	D5203	A D	4I	Q38	B C	13N	R73	B C	12O	R2510	B C	20B	R3236	B C	8C	TP2253	A D	6L	6L				
C47	B C	8N	C2224	B C	11J	C5204	A D	4H	D5204	A D	3I	Q39	B C	15M	R75	B C	14M	R2511	B C	19C	R3237	B C	2B	TP2901	B C	8C	8C				
C48	B C	8N	C2225	A D	11I	C5205	A D	2H	D5205	A D	3I	Q40	B C	11O	R7																

4.19 DEMODULATOR, SW/DISPLAY AND REC SAFETY CIRCUIT BOARDS

<14>DEMODULATOR
LPB10094-001B



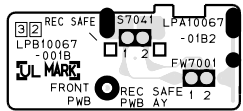
COMPONENT PARTS LOCATION GUIDE
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CAPACITOR						CONNECTOR							
C6701	B	C	1A	CN6701	A	D	3A	R6711	B	C	4C		
C6702	B	C	2A					R6712	B	C	3C		
C6703	B	C	1B	DIODE				R6713	B	C	3C		
C6704	B	C	2B	D6701	A	D	4B	R6714	B	C	3D		
C6705	B	C	2B	IC				R6715	B	C	3D		
C6706	B	C	2B	IC6701	B	C	3C	R6716	B	C	4C		
C6707	B	C	2B	COIL				R6718	B	C	1C		
C6708	B	C	2A	L6701	A	D	1A	R6719	A	D	2A		
C6709	B	C	2A	L6702	A	D	1C	R6720	B	C	3D		
C6710	B	C	3B							R6721	B	C	2D
OTHER													
C6711	B	C	3B	TRANSISTOR				K6701	B	C	1B		
C6712	B	C	4B	Q6701	B	C	1B	K6702	B	C	2B		
C6713	B	C	4C	RESISTOR				K6703	B	C	3B		
C6714	B	C	4C	R6701	B	C	1A	K6704	B	C	3B		
C6715	A	D	4D	R6702	B	C	2A	K6705	B	C	3B		
C6716	B	C	3D	R6703	B	C	1A	K6706	B	C	3D		
C6717	A	D	4D	R6704	B	C	1B	K6707	B	C	1C		
C6718	B	C	3D	R6705	B	C	2A	X6701	A	D	2B		
C6719	A	D	3D	R6706	B	C	2B						
C6720	A	D	2D	R6707	B	C	1B						
C6721	B	C	2C	R6708	B	C	3A						
C6722	A	D	1D	R6709	B	C	3A						
C6723	B	C	2C	R6710	B	C	4B						
C6724	A	D	1C										

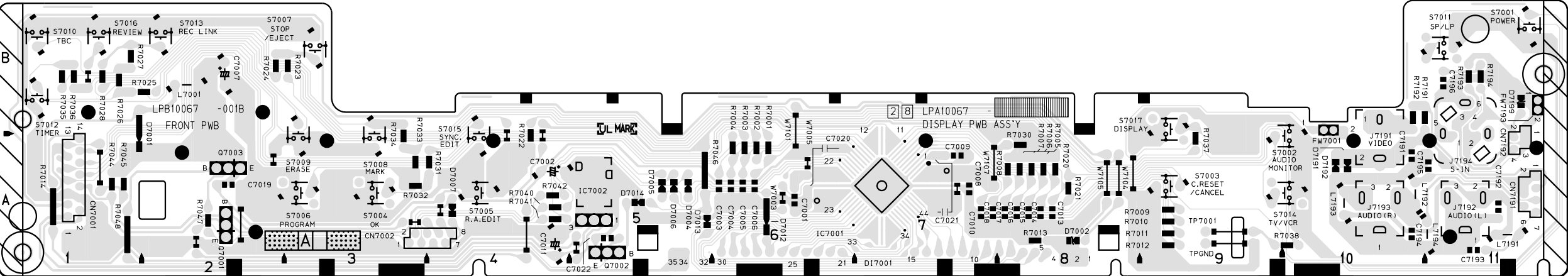
COMPONENT PARTS LOCATION GUIDE <SW/DISPLAY>

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CAPACITOR		C7017	A D 8A	CN7192	A D 11B	IC7002	A D 5A	Q7003	A D 2A	R7020	A D 8A	R7037	A D 9A
C7001	A D 6A	C7018	A D 7A	DIODE		JACK		RESISTOR		R7021	A D 8A	R7038	A D 9A
C7002	A D 4A	C7019	A D 2A	D7001	A D 1B	J7191	A D 10B	R7001	A D 6A	R7022	A D 4B	R7040	A D 4A
C7003	A D 6A	C7020	A D 6A	D7004	A D 5A	J7192	A D 11A	R7002	A D 6A	R7023	A D 3B	R7041	A D 4A
C7004	A D 6A	C7021	A D 7A	D7005	A D 5A	J7193	A D 10A	R7003	A D 6A	R7024	A D 2B	R7042	A D 4A
C7005	A D 6A	C7022	A D 5A	D7006	A D 5A	J7194	A D 11A	R7004	A D 6A	R7025	A D 2B	R7044	A D 1A
C7006	A D 6A	C7191	A D 10A	D7007	A D 4A	COIL		R7005	A D 6A	R7026	A D 1B	R7045	A D 1A
C7007	A D 2B	C7192	A D 11A	D7012	A D 6A	L7001	A D 2B	R7006	A D 6A	R7027	A D 1B	R7046	A D 5A
C7008	A D 7A	C7193	A D 11A	D7013	A D 5A	L7191	A D 11A	R7007	A D 6A	R7028	A D 1B	R7047	A D 2A
C7009	A D 7A	C7194	A D 10A	D7014	A D 5A	L7192	A D 10A	R7008	A D 6A	R7030	A D 8A	R7048	A D 1A
C7010	A D 7A	C7195	A D 11A	D7015	A D 5A	L7193	A D 10A	R7009	A D 6A	R7031	A D 4A	R7191	A D 11B
C7011	A D 4A	C7196	A D 11B	D7191	A D 10A	L7194	A D 11A	R7010	A D 6A	R7032	A D 3A	R7192	A D 10B
C7013	A D 8A	CONNECTOR		D7192	A D 10A	TRANSISTOR		R7011	A D 6A	R7033	A D 3A	R7193	A D 11B
C7014	A D 8A	CN7001	A D 1A	D7199	A D 11B	Q7001	A D 2A	R7012	A D 6A	R7034	A D 3A	R7194	A D 11B
C7015	A D 8A	CN7002	A D 3A	IC		Q7002	A D 5A	R7013	A D 6A	R7035	A D 1B	SWITCH	
C7016	A D 8A	CN7191	A D 11A	IC7001	B C 7A			R7014	A D 1A	R7036	A D 1B	S7001	A D 11B

<32>REC SAFETY
LPB10067-001B

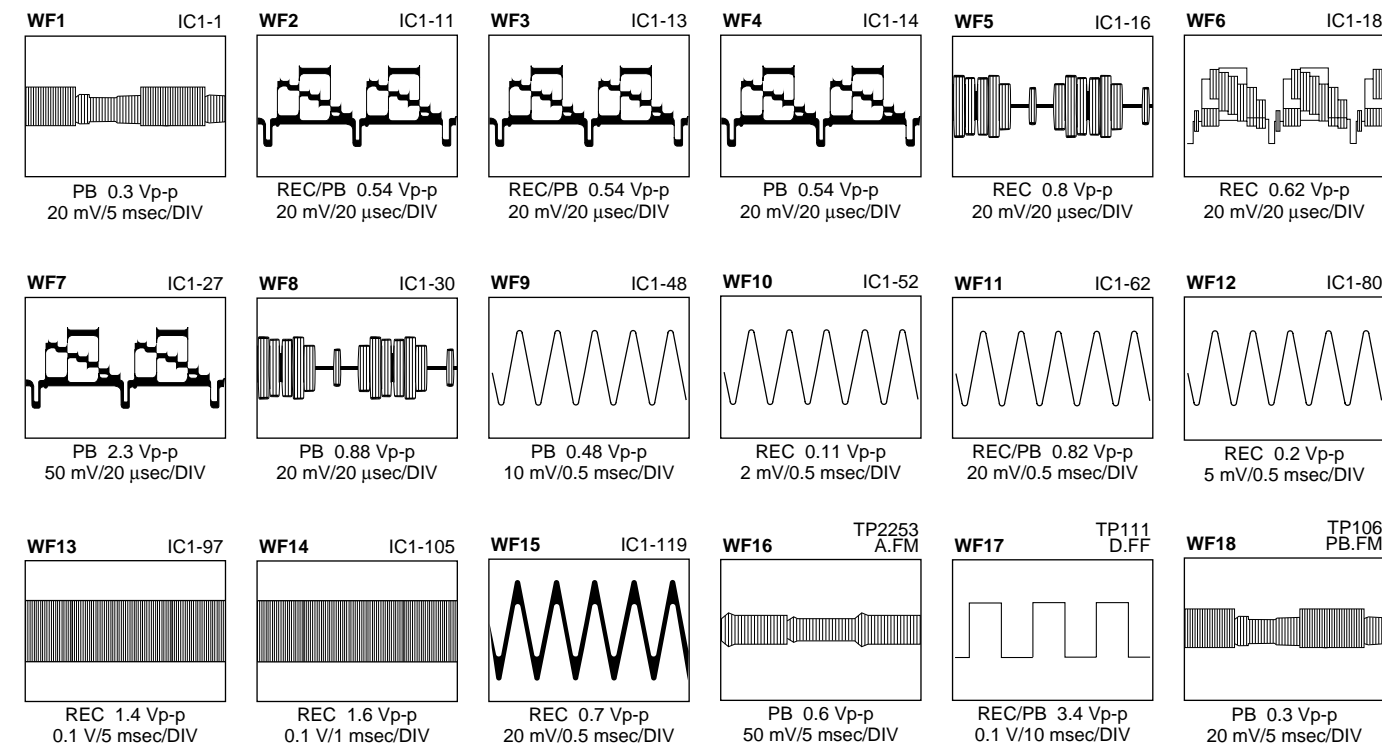


<28>SW/DISPLAY
LPB10067-001B

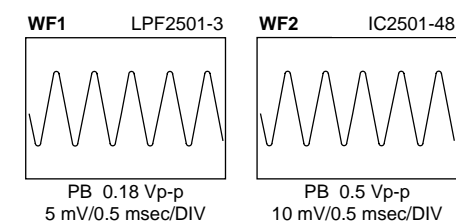


4.22 WAVEFORMS

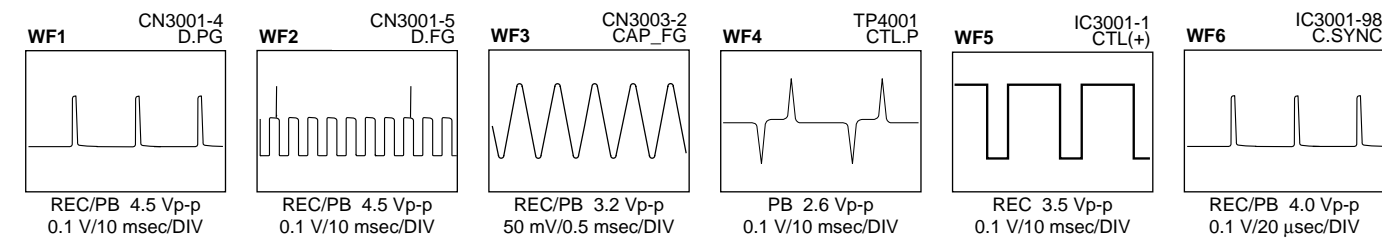
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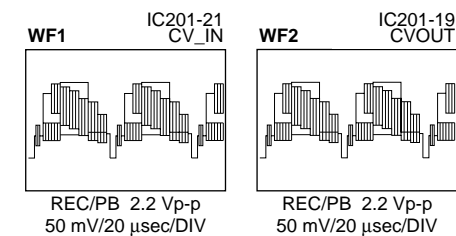
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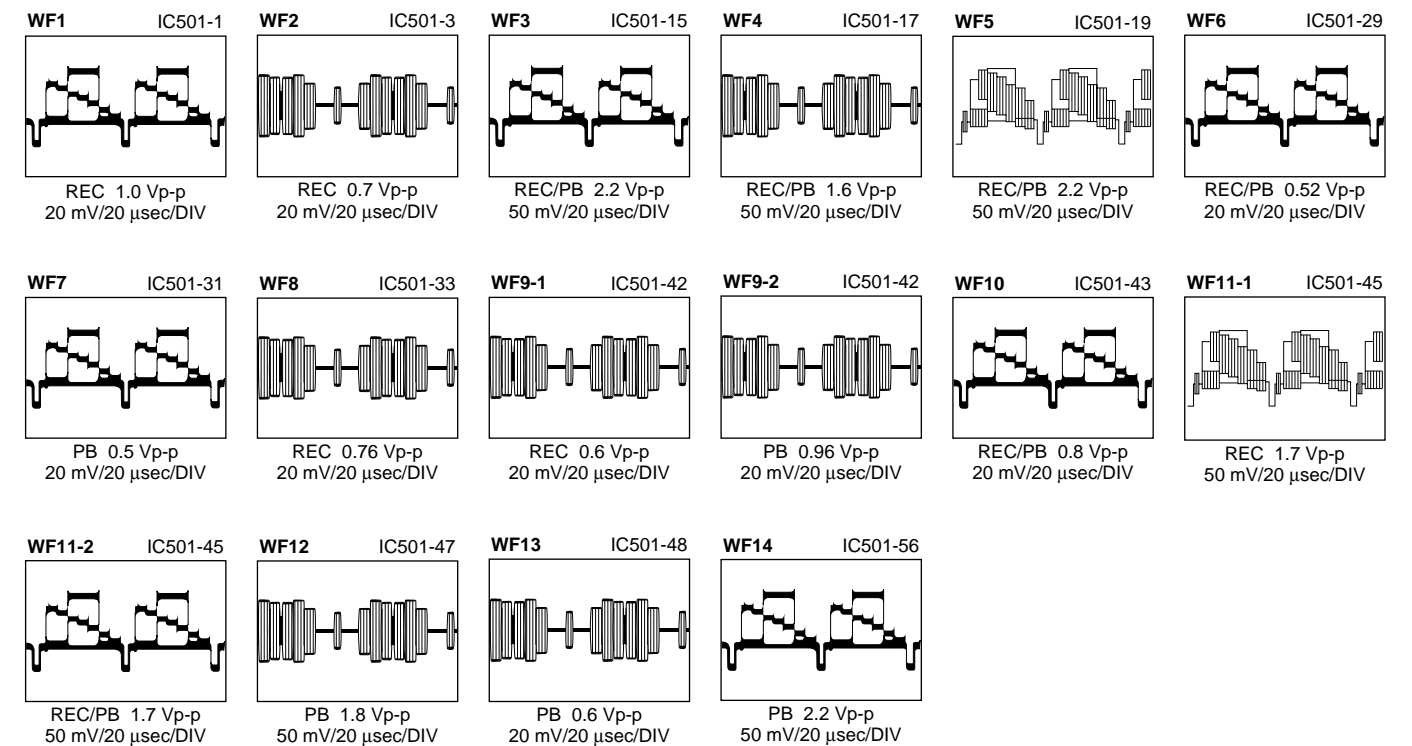
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4.23 VOLTAGE CHARTS

<VIDEO/AUDIO>

MODE PIN NO.	REC	PLAY
IC1		
1	4.2	2.1
2	2.8	2.8
3	2.6	2.6
4	1.9	1.9
5	1.9	1.9
6	2.4	2.1
7	1.5	1.2
8	0	4.1
9	2.6	1.9
10	2.8	2.8
11	3.1	3.1
12	2.8	2.5
13	3.1	3.1
14	3.5	2.5
15	0	0
16	2.8	2.8
17	1.5	1.5
18	2.8	2.8
19	3.3	3.3
20	2.8	2.8
21	1.6	2.0
22	2.8	2.8
23	3.1	2.8
24	4.9	5.0
25	0.3	0.3
26	0	0
27	1.3	2.1
28	2.8	2.3
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.6	2.6
33	4.9	4.9
34	2.7	2.2
35	4.9	4.9
36	2.5	2.5
37	2.3	2.3
38	-	-
39	1.3	1.3
40	-	-
41	2.7	2.7
42	2.2	2.2
43	0	0
44	2.1	2.1
45	4.7	4.7
46	4.1	4.1
47	3.0	3.0
48	2.6	2.6
49	4.9	4.9
50	2.5	2.5
51	2.8	2.8
52	2.3	2.3
53	2.3	2.3
54	2.5	2.5
55	2.2	2.2
56	0.4	0.4
57	2.4	2.4
58	8.3	8.3
59	4.7	4.7
60	4.1	4.1
61	4.2	4.2
62	4.2	4.2
63	2.3	2.3
64	2.3	2.3
65	0.6	0.6
66	3.2	3.2
67	4.2	4.2
68	4.2	4.2
69	2.4	2.4
70	0	0
71	0.3	0.3
72	0.2	0.2
73	0.3	0.3
74	2.3	2.3
75	2.6	2.6
76	0	0
77	2.6	2.6
78	0.3	0.3
79	0.2	0.2
80	0.2	0.2
81	2.3	2.3
82	0.8	0.8
83	0	0
84	2.4	2.4
85	2.3	2.3
86	2.3	2.3
87	1.7	1.9
88	2.3	2.3
89	2.3	2.3
90	2.4	2.4
91	0	0
92	0	0
93	0	2.3
94	1.9	1.3
95	0	0
96	2.5	2.3
97	2.7	2.3
98	2.5	2.3
99	5.0	5.0
100	5.0	5.0

MODE PIN NO.	REC	PLAY
101	0	0
102	0	0
103	0	0
104	2.4	2.4
105	2.4	2.4
106	2.4	2.4
107	5.0	5.0
108	0	0
109	0	0
110	0	0
111	0	4.0
112	2.6	2.6
113	0.5	0.4
114	0	0
115	2.5	2.5
116	2.5	2.5
117	2.5	2.5
118	0	0
119	2.5	2.5
120	4.5	4.4
CN1		
4	0	0
5	0	0
6	0	0
7	0	0
8	2.4	2.3
9	2.4	2.3
10	2.4	2.3
11	2.4	2.3
12	2.7	2.3
13	2.7	2.3
14	2.7	2.3
15	0	0
16	0	0
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.2	2.4
7	2.4	2.4
CN2002		
1	0	0
2	0	0
CN2051		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<AUDIO ERASE>

MODE PIN NO.	REC	PLAY
CN2052		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<VSC>

MODE PIN NO.	REC	PLAY
IC2501		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	-	-
11	-	-
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	5.0	5.0
19	0	1.4
20	5.0	5.0
21	0	0
22	0	0
23	0	0
24	5.0	5.0
25	5.0	5.0
26	5.0	5.0
27	5.0	5.0
28	5.0	5.0
29	5.0	5.0
30	5.0	5.0
31	5.0	5.0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	5.0	5.0

MODE PIN NO.	REC	PLAY
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	2.4	2.4
44	0	0
45	2.5	2.5
46	2.5	2.5
47	2.5	2.5
48	2.5	2.5
49	2.5	2.5
50	2.5	2.5
51	2.5	2.5
52	2.5	2.5
53	5.0	5.0
54	0	0
55	0	0
56	0	0
57	0	0
58	4.9	4.9
59	5.0	5.0
60	5.0	5.0
61	5.0	5.0
62	0	0
63	0	0
64	0	0

<SYSTEM CONTROL>

MODE PIN NO.	REC	PLAY
IC3001		
1	-	2.4
2	0	0
3	-	2.4
4	2.4	2.4
5	0	0.3
6	2.5	2.5
7	2.4	2.4
8	2.4	2.4
9	5.0	5.0
10	4.9	4.9
11	0	0
12	0	0
13	0	3.1
14	4.7	4.7
15	4.8	4.8
16	0.5	0.5
17	0	0
18	0	0
19	3.2	3.2
20	4.5	4.5
21	3.9	3.9
22	1.9	1.4
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	4.9	4.9
31	4.9	4.9
32	0.6	0.6
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	3.4	3.3
39	4.3	4.3
40	0	0
41	4.9	4.9
42	4.5	4.5
43	0	0
44	0	0
45	4.9	4.9
46	0	0
47	0	0
48	-	-
49	4.0	4.0
50	4.8	4.6
51	4.9	4.9
52	4.0	4.0
53	4.3	4.3
54	-	-
55	-	-
56	0	0
57	0	0
58	4.9	0
59	0	0
60	0	0
61	0	0
62	0	0
63	5.0	5.0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-

MODE PIN NO.	REC	PLAY
IC3002		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.5	2.5
7	2.4	2.4
8	2.4	2.4
9	5.0	5.0
10	4.9	4.9
11	0	0
12	0	0
13	0	3.1
14	4.7	4.7
15	4.8	4.8
16	0.5	0.5
17	0	0
18	0	0
19	3.2	3.2
20	4.5	4.5
21	3.9	3.9
22	1.9	1.4
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	4.9	4.9
31	4.9	4.9
32	0.6	0.6
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	3.4	3.3
39	4.3	4.3
40	0	0
41	4.9	4.9
42	4.5	4.5
43	0	0
44	0	0
45	4.9	4.9
46	0	0
47	0	0
48	-	-
49	4.0	4.0
50	4.8	4.6
51	4.9	4.9
52	4.0	4.0
53	4.3	4.3
54	-	-
55	-	-
56	0	0
57	0	0
58	4.9	0
59	0	0
60	0	0
61	0	0
62	0	0
63	5.0	5.0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-

MODE PIN NO.	REC	PLAY
IC3501		
1	3.5	3.5
2	0.2	0.2
3	0	0
4	0.2	0.2
5	12.1	12.1
6	12.1	12.1
7	0	0
8	0	0
9	0	0
10	0	0.2
11	0	0.2
12	9.3	0
13	4.8	0
14	3.6	3.6
15	0	0
16	4.9	4.9
IC3651		
1	0	0
2	0	0
3	-	-
4	5.7	5.7
5	3.1	3.1
6	4.5	4.5
7	0	0

MODE PIN NO.	REC	PLAY
70	5.0	5.0
71	5.0	5.0
72	5.0	5.0
73	5.0	5.0
74	0	0
75	4.5	4.5
76	4.5	4.5
77	0	0
78	0	0
79	5.0	5.0
80	0	0
81	0	0
82	4.9	4.9
83	-	-
84	0	0
85	0	0
86	5.0	5.0
87	5.0	0
88	4.9	4.9
89	0	0
90	0	0
91	2.8	2.8
92	4.9	4.9
93	0	0
94	4.9	4.9
95	4.9	4.9
96	0	0
97	4.9	4.9
98	0.3	0.3
99	0	-
100	-	-
101	2.8	2.8
102	1.2	1.2
103	5.0	5.0
104	4.8	4.8
105	4.8	4.8
106	4.8	4.8
107	0	0
108	1.5	1.5
109	4.9	4.9
110	0	0
111	0	0
112	2.4	2.4
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
IC3003		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.9	4.9
IC3004		
1	11.4	11.4
2	0	0
3	0	0
4	0	0
5	11.4	11.4
6	11.4	11.4
7	0	0
8	0	0
9	0	0
IC3501		
1	5.6	5.6
2	5.1	5.1
3	4.5	4.5
4	0	0
5	11.9	11.9
6	11.2	11.2
7	12.1	12.2
8	5.6	5.6
9	1.3	1.3
10	4.3	4.3

MODE PIN NO.	REC	PLAY
8	0	0
9	0	0
10	0	0
11	0	0
12	0	2.8
13	0	0
14	0	0
15	0	0
16	4.9	4.9
CN3001		
1	11.4	11.5
2	0	0
3	1.4	1.4
4	0	0
5	1.5	1.5
CN3002		
1	0	0
2	0	0
CN3003		
1	0	0
2	2.5	2.5
3	2.7	2.7
4	5.0	5.0
5	0	0
6	4.9	4.9
7	-	-
8	11.3	11.4
CN3004		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
CN3011		
1	4.9	4.9
2	4.9	4.9
3	4.9	4.9
4	4.9	4.9
5	4.3	4.3
6	4.9	4.9
7	3.9	3.9
8	4.3	4.3
9	4.9	4.9
10	0	0
11	0	0
12	-17.8	-17.8
13	-14.2	-14.2
14	-26.7	-26.7
CN3501		
1	0	0
2	0	0
3	0	0
4	5.0	5.0
5	0	0
6	0	0

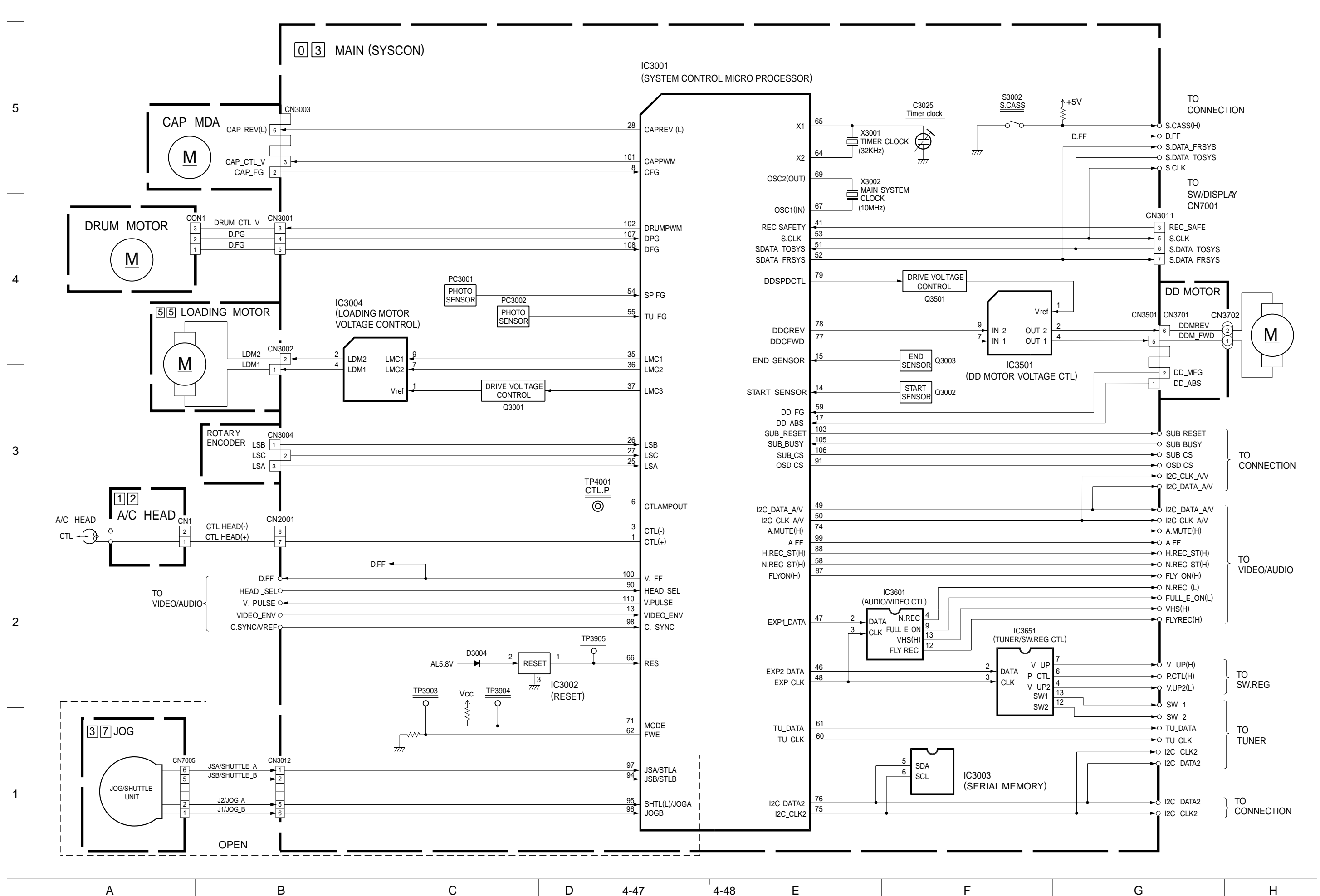
4.24 CPU PIN FUNCTION

<SYSCON IC3001>

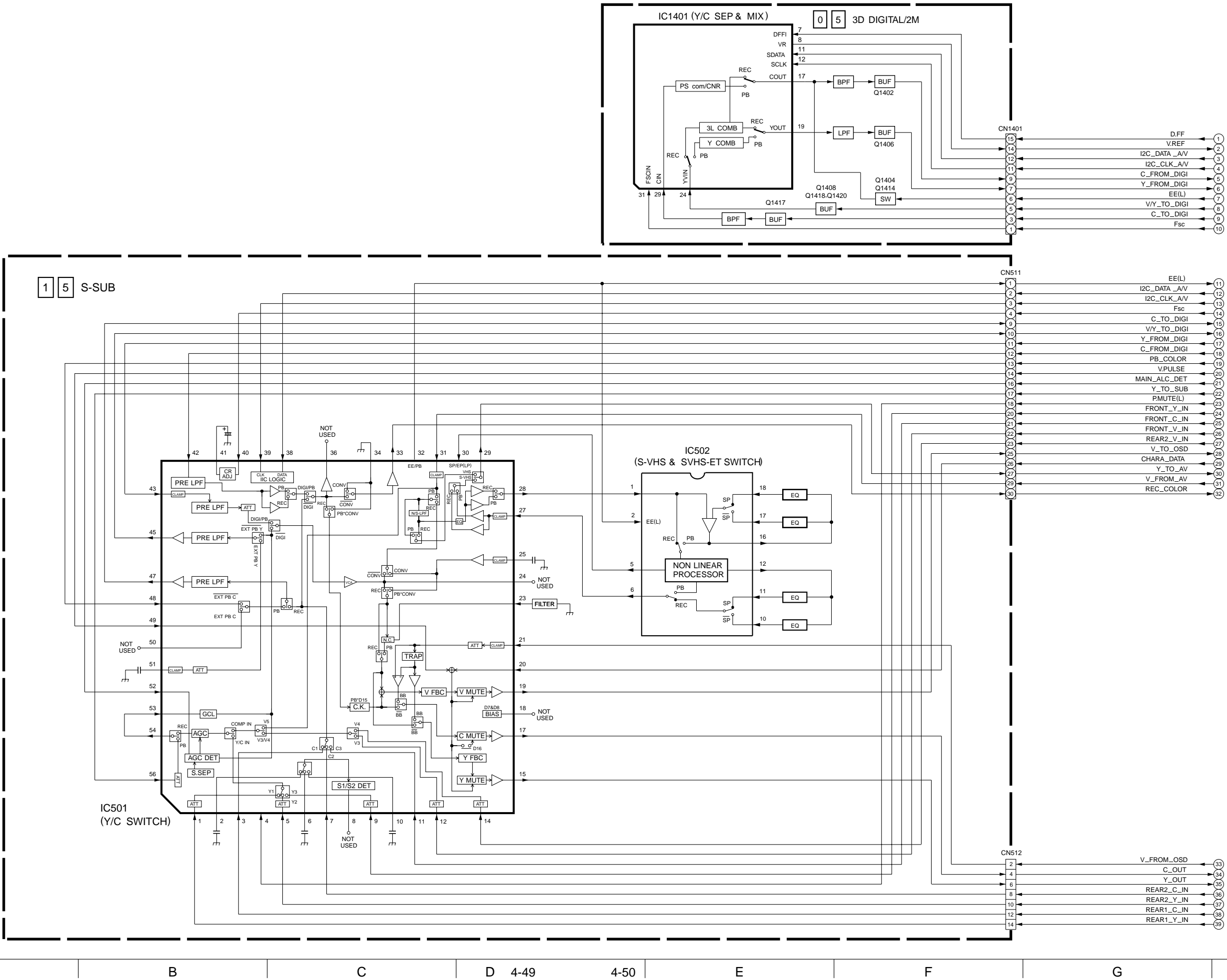
PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEEDBACK
6	CTLAMPOUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	SVHS MODE:H
12	SECAM_DET(H)/KILLER_DET(BIT_IN(H))	IN	NC/COLOR KILLER DETECT/NC
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	START SENSOR
15	END_SENSOR	IN	END SENSOR
16	IND(L)	IN	AUDIO INPUT (LCH) FOR THE FDP AUDIO INDICATOR
17	DD_ABS	IN	DYNAMIC DRUM POSITION DETECT
18	SCR_ID/WA_DET	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)/NC
19	IND(R)	IN	AUDIO INPUT (RCH) FOR THE FDP AUDIO INDICATOR
20	BS_ANT/AFC	IN	TUNING CLOCK
21	LED/RF AGC	IN	NO CHANGES IN A-TS-H:IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
22	A_ENV/ND(L)	IN	AUDIO PB FM ENV:INPUT/NON HIFI MODE:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP_REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
29	RC	IN	REMOTE CONTROL DATA INPUT
30	LOCK(L)/P.SAVE[0.1]	IN	TUNING PLL LOCK DETECT:L/NC
31	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
32	R.PAUSE/COMPU_IN	IN	REMOTE PAUSE CONTROL / A/V COMPULINK INPUT
33	RAE_OUT/COMPU/OUT	OUT	NC / A/V COMPULINK OUTPUT
34	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
35	LMC1	OUT	LOADING MOTOR DRIVE(1)
36	LMC2	OUT	LOADING MOTOR DRIVE(2)
37	LMC3	OUT	LOADING MOTOR DRIVE(3)
38	SB_G(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	STB/TEST	OUT	STROBE SIGNAL (FOR FDP DRIVER)
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
42	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
43	VSS	-	GND
44	RMO	OUT	REMOTE CONTROL OUTPUT FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	EXP2_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR TUNER/REG CONTROL
47	EXP1_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR AUDIO/VIDEO CONTROL
48	EXP_CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR AUDIO/VIDEO AND TUNER/REG CONTROL
49	I2C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
50	I2C_CLK_A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
51	S.DATA_TOSYS	IN	SERIAL DATA TRANSFER OUTPUT FROM THE ON-SCREEN IC TO THE FDP DRIVER
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	JUST_CLK/EDS(H)	-	NC

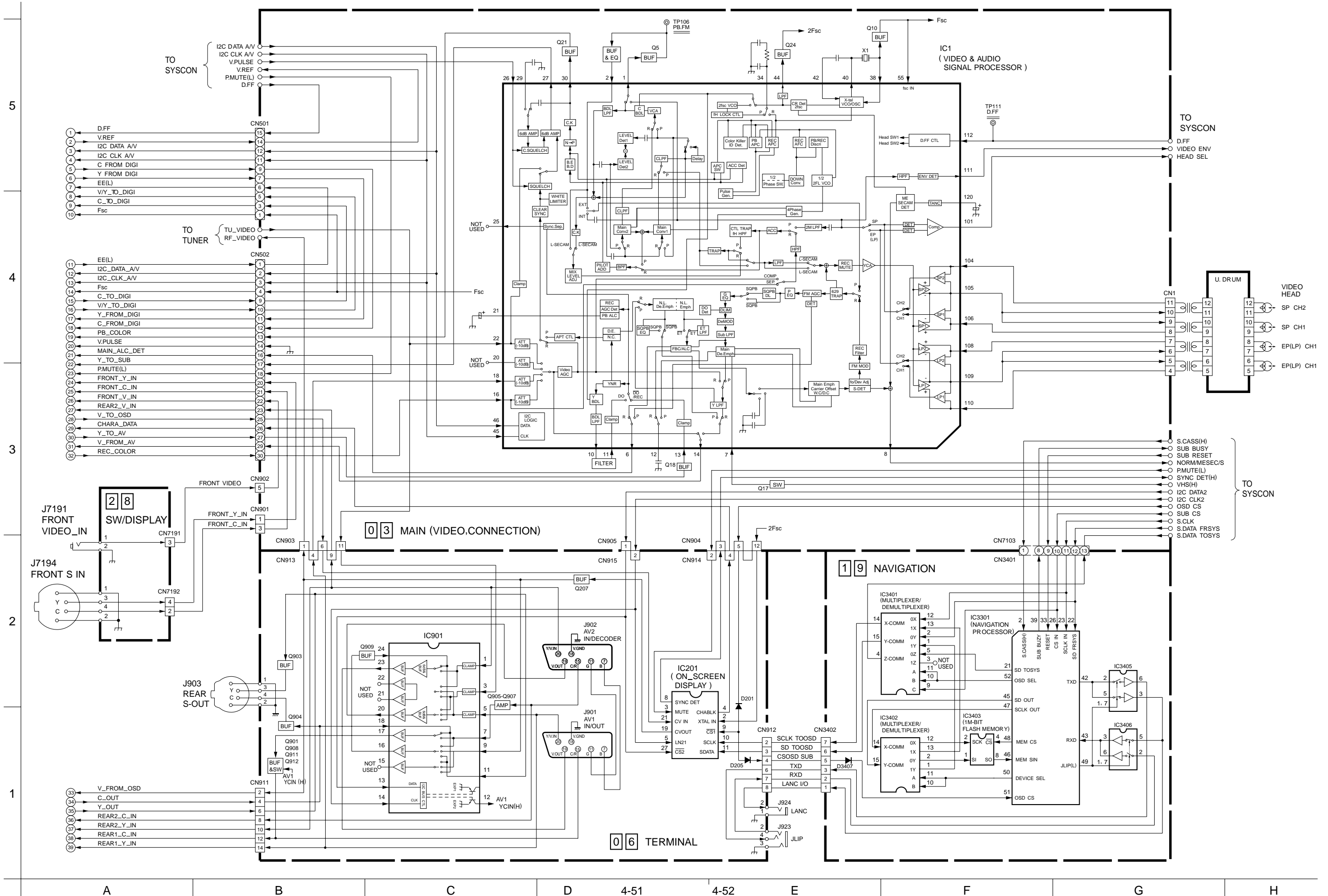
PIN NO.	LABEL	IN/OUT	FUNCTION
57	TU_CE	OUT	CHIP ENABLE OF THE TUNER UNIT
58	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
59	DD_FG	IN	DYNAMIC DRUM FG INPUT
60	TU_CLK	OUT	CLOCK FOR DATA TRANSFER TO THE TUNER UNIT
61	TU_DATA	OUT	TUNING DATA
62	FWE	-	NC
63	NMI(L)	-	NC
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES(L)	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK(10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK(10MHz)
70	VCC	-	SYSTEM POWER
71	MODE	-	NC
72	TU_A_MUTE(H)	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
73	TU_V_MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C_CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C_DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	DDCFWD	OUT	DYNAMIC DRUM CONTROL (FORWARD)
78	DDCREV	OUT	DYNAMIC DRUM CONTROL (REVERSE)
79	DDSPDCTL	OUT	DYNAMIC DRUM SPEED CONTROL
80	V.P.CTL	OUT	V.PULSE CONTROL, V COMPENSATION DURING SPECIAL PLAYBACK
81	R-Y_REV/EDS_CS/EXT(L)	OUT	PAL EP MODE CONTROL/NC/NC
82	VCC	-	SYSTEM POWER
83	SLOW_P/CNR_CTL	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE / NC
84	VSS	-	GND
85	SP_SHORT(H)	OUT	MODE SELECT
86	LP_SHORT(H)	OUT	MODE SELECT
87	FLY_ON(H)	OUT	FLYING ERASE ON:H
88	H.REC_ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)/M_TRICK(L)	OUT	SPECIAL PLAYBACK: H/REC AFC FILTER, PB APC FILTER, BURST ACC FILTER, COLOR KILLER DET FILTER
90	HEAD_SEL	OUT	HEAD SELECT(LP HEAD:H, SP HEAD:L)
91	OSD_CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
92	SYNC_DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL (DETECTED:H)
93	MESECAM(H)	OUT	MESECAM:H
94	JSB/STLB	-	NC
95	SHTL(L)/JOGA	-	NC
96	JOGB/S_CASS(H)	-	NC
97	JSA/STLA	-	NC
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	SUB_RESET	OUT	RESET SIGNAL FOR THE SUB CPU (NAVI)
104	HI_FF/REW(L)	OUT	HIGH FF/REW:L
105	SUB_BUSY	IN	SUB CPU (NAVI) BUSY
106	SUB_CS	OUT	CHIP SELECT FOR THE SUB CPU (NAVI)
107	DPG	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFERENCE VOLTAGE

4.25 SYSTEM CONTROL BLOCK DIAGRAM

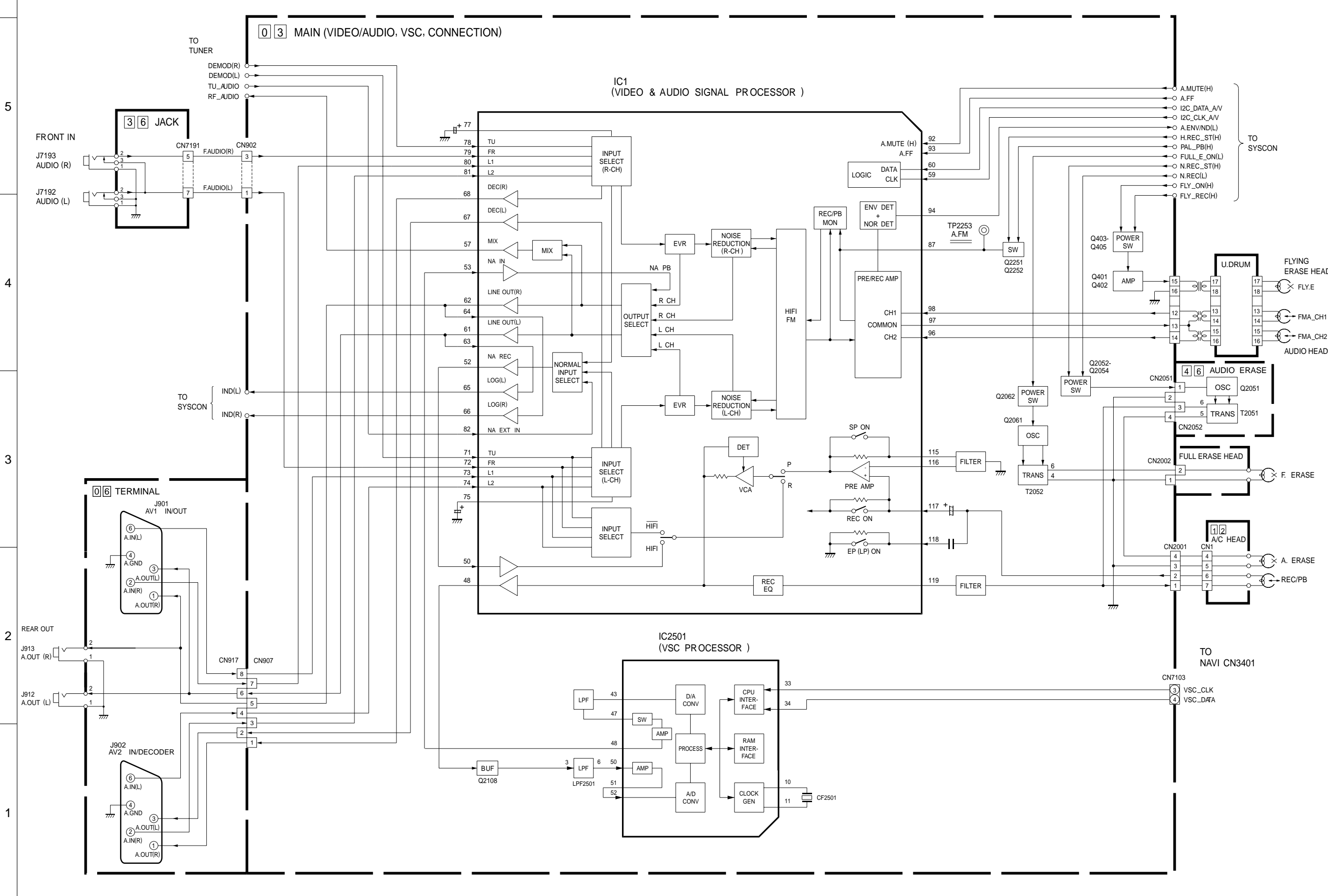


4.26 VIDEO BLOCK DIAGRAM





4.27 AUDIO BLOCK DIAGRAM



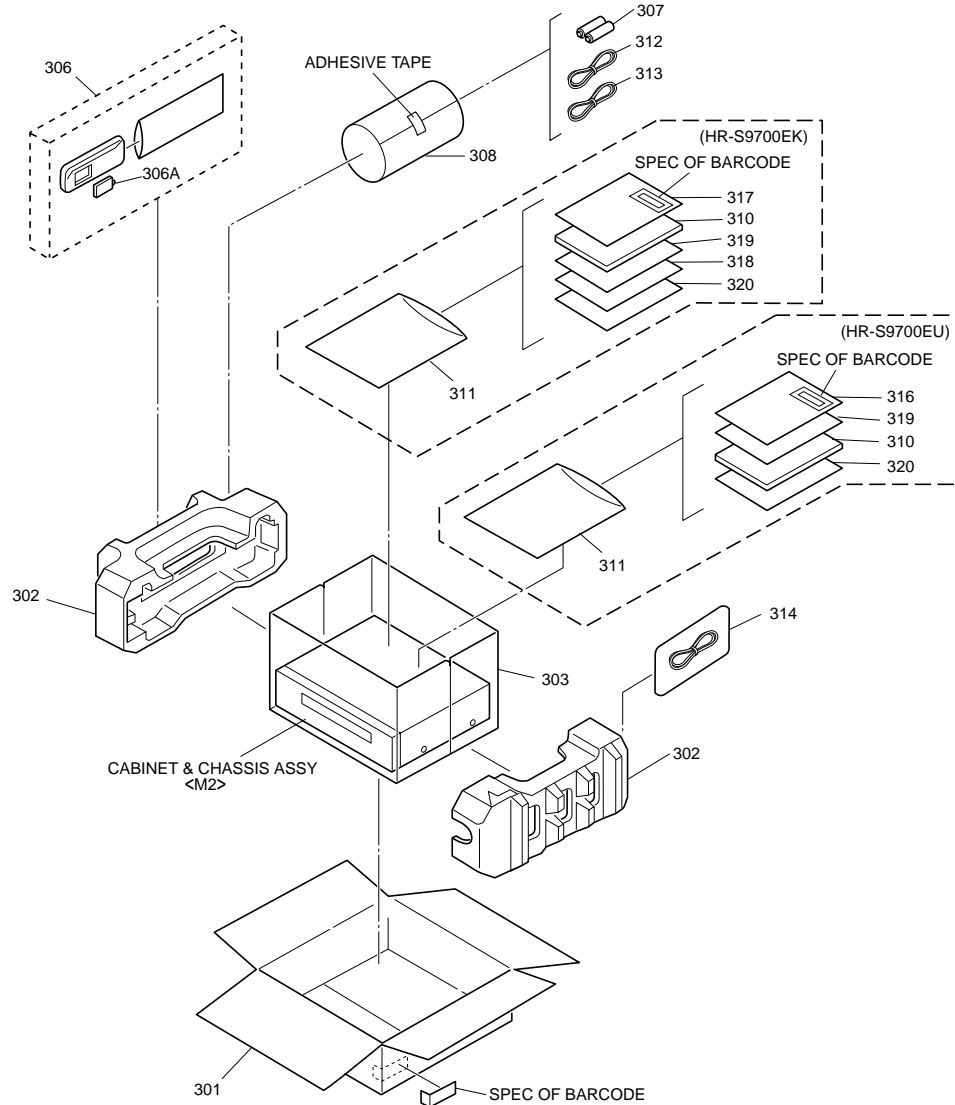
SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the \triangle symbol are critical for safety. Replace only with specified part numbers.

5.1 PAC KING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



\triangle REF No. PART No. PART NAME, DESCRIPTION

PACKING AND ACCESSORY ASSEMBLY <M1>

301	LP30715-001B	PACKING CASE
302	LP30667-001C	CUSHION ASSY
303	PQM30021-95	POLY BAG
306	LP20667-008B	REMOTE CONTROLLER
306A	LP40225-002A	COVER(BATTERY)
307	-	BATTERY,X2("R6"TYPE)
308	QPC02202230P	POLY BAG
\triangle 310	LPT0320-001B	INST BOOK(EN),S9700EK
\triangle	LPT0328-001A	INST BOOK(EN),S9700EU
\triangle	LPT0328-002A	INST BOOK(GE),S9700EU
\triangle	LPT0328-003A	INST BOOK(FR),S9700EU
\triangle	LPT0328-004A	INST BOOK(DU),S9700EU
\triangle	LPT0328-005A	INST BOOK(SP),S9700EU
\triangle	LPT0328-006A	INST BOOK(IT),S9700EU

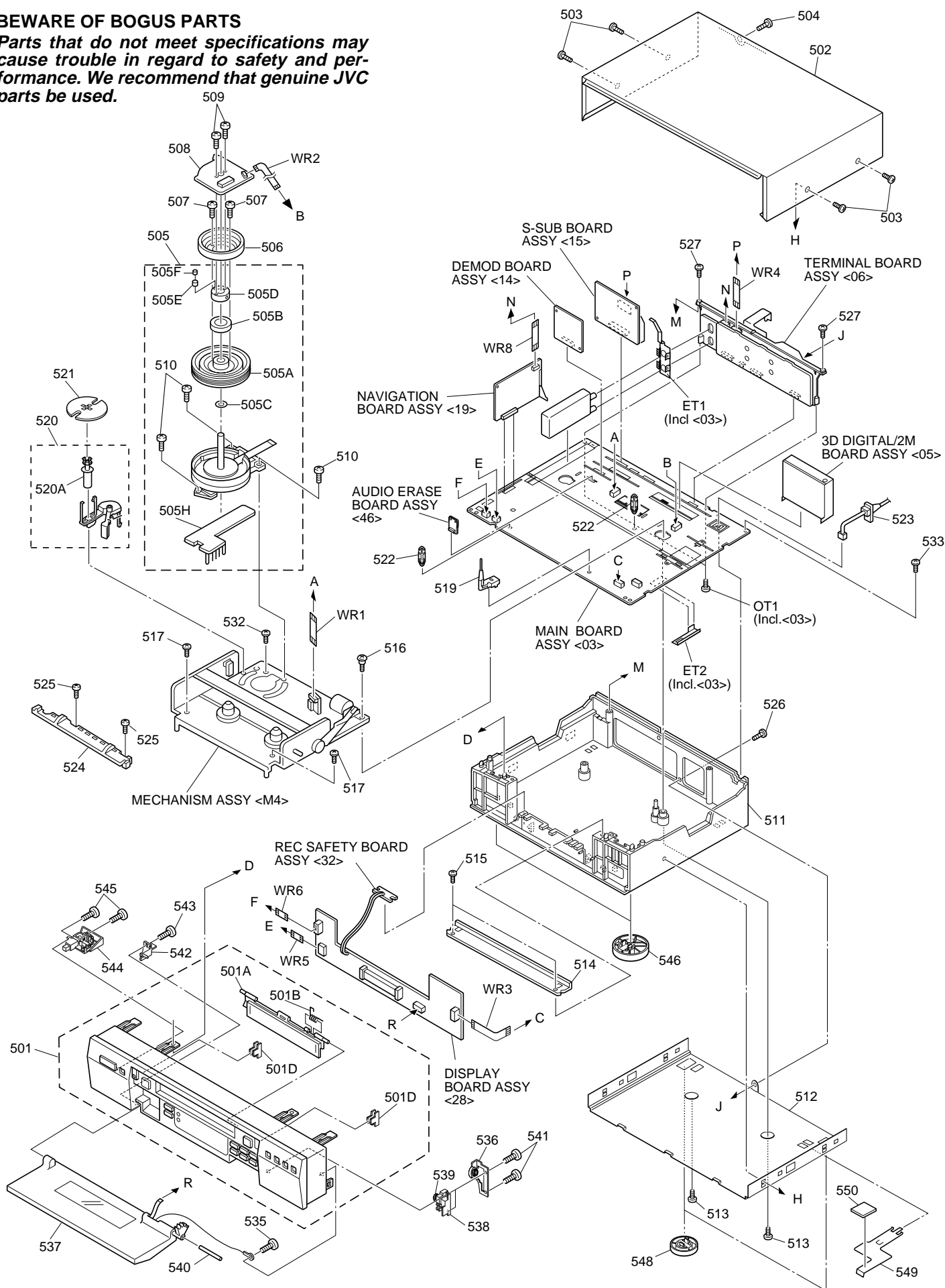
\triangle REF No. PART No. PART NAME, DESCRIPTION

\triangle	LPT0328-007A	INST BOOK(DA),S9700EU
\triangle	LPT0328-008A	INST BOOK(FI),S9700EU
\triangle	LPT0328-009A	INST BOOK(SW),S9700EU
\triangle	LPT0328-010A	INST BOOK(NO),S9700EU
\triangle	LPT0328-011A	INST BOOK(PT),S9700EU
\triangle	LPT0328-012A	INST BOOK(GR),S9700EU
\triangle	LPT0328-013A	INST BOOK(CZ),S9700EU
\triangle	LPT0328-014A	INST BOOK(PO),S9700EU
\triangle	LPT0328-015A	INST BOOK(HU),S9700EU
\triangle	LPT0328-016A	INST BOOK(RU),S9700EU
311	QPC02503530P	POLY BAG
312	PEAC0300-02	RF CABLE
313	PEAC0358-120	S CABLE
314	QAL0095-005	LED CABLE ASSY(Satellite Controller)
316	BT-54013-1	WARRANTY CARD,S9700EU
317	BT-54008-2	GUARANTY CARD,S9700EK
318	LYT0194-001A	Q.CARD(JUK),S9700EK
319	LP40437-001A	LABEL(S-VHS ET)
320	LP40605-001A	SHEET

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

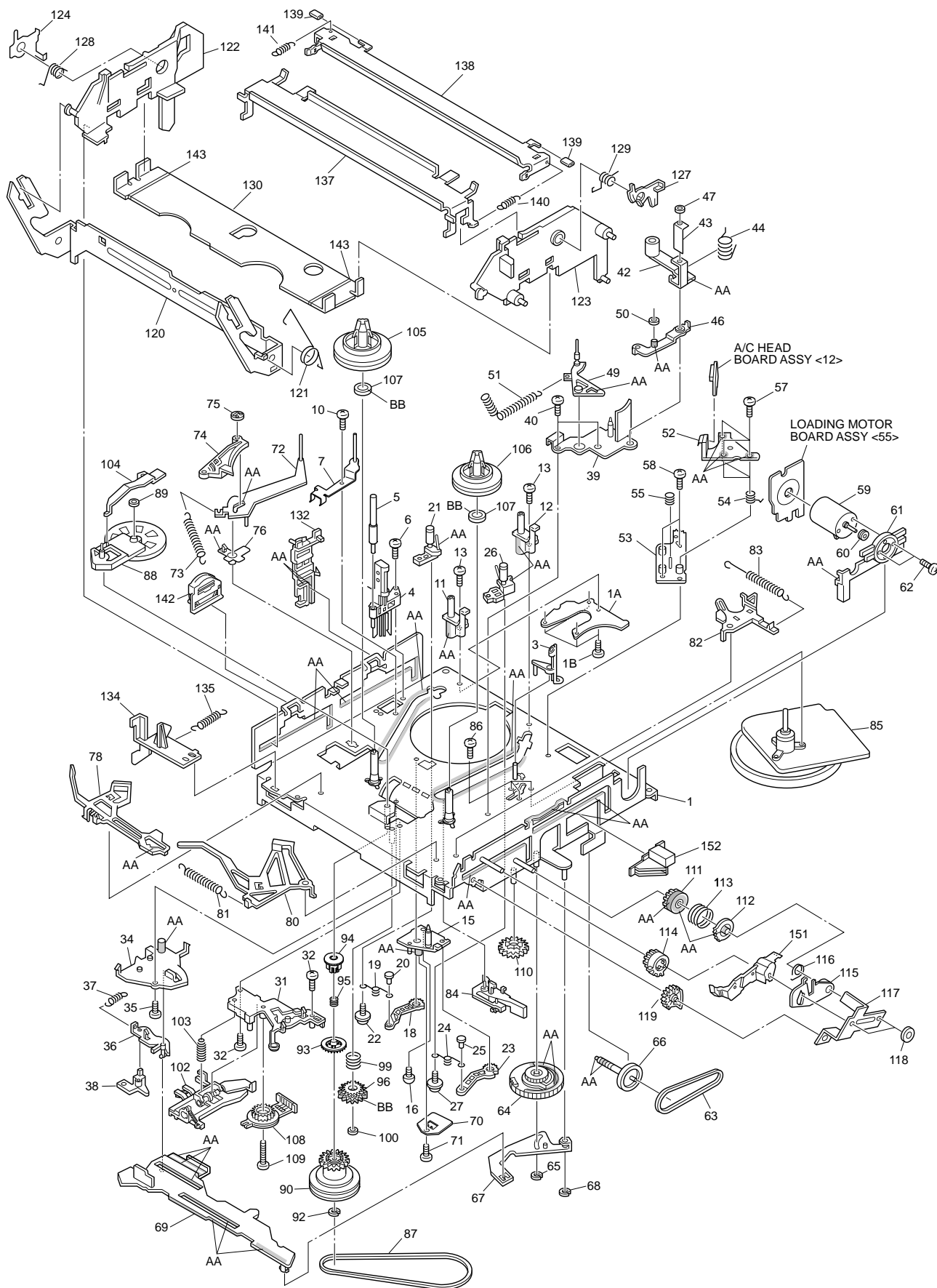
BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
*****					WR1		QUQ112-0720CG		FFC WIRE,A/C HEAD CN2001
					WR2		QUQ212-0518CG		FFC WIRE,DRUM CN3001
					WR3		QUQ112-1414CG		FFC WIRE,DISPLAY CN3011
					WR4		QUQ112-1407CG		FFC WIRE,TERMINAL CN512
					WR5		QUQ212-0516CG		FFC WIRE,JACK CN902
					WR6		QUQ212-0416CG		FFC WIRE,S(FSA) CN901
					WR8		QUQ112-0826CG		FFC WIRE,NAVIGATION CN912
CABINET AND CHASSIS ASSEMBLY <M2>									
△		501	LP10236-005C	FRONT PANEL ASSY,S9700EK					
△			LP10236-006C	FRONT PANEL ASSY,S9700EU					
		501A	LP20661-003A	CASSETTE DOOR					
		501B	PQ46448	TORSION SPRING					
		501D	PEME0879	MAGNET ASSY,X2					
△		502	PQ11922-34	TOP COVER					
		503	QYTDSF3010R	SCREW,X4 TOP COVER(SIDE)					
		504	QYTDSF3010M	SCREW,TOP COVER(REAR)					
		505	LP20319-021A	DRUM SUB ASSY					
		505A	LP20030-022A	UPPER DRUM ASSY					
		505B	LP40543-001A	CAP					
		505C	PDM4444-19-2	WASHER					
		505D	LP40572-001A	COLLAR ASSY					
		505E	LP40323-001A	CONTACT					
		505F	LP30004-014A	COMPRESSION SPRING					
		505H	LPA20002-01C	SENSOR BOARD ASSY					
		506	PDZ0179-2-4	ROTOR ASSY					
		507	QYSPSP3006Z	SCREW,X2					
△		508	QAR0119-001	STATOR ASSY					
		509	QYSPSPH2606Z	SCREW,X2					
		510	QYTDST2610Z	SCREW,X3 DRUM					
△		511	LP10140-003G	BOTTOM CHASSIS					
△		512	PQ11921-1-4	BOTTOM COVER					
		513	QYTDSF3010Z	SCREW,X2					
		514	LP30312-001B	BRACKET(CHASSIS)					
		515	QYTDSF3010Z	SCREW,X2					
		516	LP40700-001A	SPECIAL SCREW,MECHA					
		517	QYTDSF3010Z	SCREW,X2 MECHA					
		519	LP40407-001A	KNOB ASSY					
		520	LP40370-001E	ROLLER ARM ASSY					
		520A	PDM4311A-1	ROLLER ASSY					
		521	PQ45160	INERTIA PLATE					
		522	LP40226-001A	PC SUPPORT,X2					
△		523	QMP4A10-170	POWER CORD,S9700EU					
△			QMP51K0-170-K	POWER CORD,S9700EK					
		524	LP30247-001C	FRONT BRACKET					
		525	QYTDST2606Z	SCREW,X2					
		526	QYTDSF3010M	SCREW,TERMINAL					
		527	QYTPSFG3010Z	SCREW,X2 TERMINAL					
		532	QYTDSF4012Z	SCREW,MECHA					
		533	QYTDSF3010Z	SCREW,MAIN					
		535	QYTDSF3010Z	SCREW,EARTH PLATE					
		536	LP40582-002A	DAMPER ASSY					
		537	LP20702-004A	MEMBRANE DOOR					
		538	LP30570-001A	HOLDER(DAMPER)					
		539	QZW0012-002	DAMPER					
		540	LP40500-001A	SHAFT					
		541	QYTDSF3010Z	SCREW,X2					
		542	LP40501-001A	HOLDER(DOOR)					
		543	QYTDSF3010Z	SCREW					
		544	QZW0031-002	DOOR OPEN UNIT					
		545	QYTDSF3010Z	SCREW,X2					
		546	PQ46617A-1	FOOT ASSY,X2					
		548	PQ35504-2	FOOT(2),X2					
		549	LP40659-001A	EARTH PLATE(2)					
		550	LP30002-092A	SPACER					

5.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION

MECHANISM ASSEMBLY <M4>									
1			LP20884-002F	MAIN DECK ASSY	72			LP40108-002A	TENSION ARM ASSY
1A			LP40275-002B	PLATE(SUPPLY)	73			LP30003-010A	TENSION SPRING
1B			QYTDST2606Z	SCREW,X4	74			LP40109-003D	TENSION BRAKE ASSY
3			LP30492-002B	GIDE POOL GUARD	75			PQ46302-1-3	ADJUST PIN
4			NAH0001-001	FULL ERASE HEAD	76			LP30232-002A	TENSION ARM BEARING
5			LP40098-001B	GUIDE POLE(SUPPLY)	78			LP40532-009B	MAIN BRAKE ASSY (SUPPLY)
6			QYTDST2608Z	SCREW	80			LP40111-014B	MAIN BRAKE AY (TAKE UP)
7			LP40637-002A	TENSION STUD BASE ASSY	81			LP30003-029A	TENSION SPRING
10			QYTDST2606Z	SCREW	82			LP40112-001F	SUB BRAKE ASSY(TAKE UP)
11			LP30409-002C	UV CATCHER 2	83			LP40357-001B	TENSION SPRING
12			LP30409-002C	UV CATCHER 2	84			LP40461-001A	CAPSTAN BRAKE ASSY
13			QYTPST2606Z	SCREW,X2	85			QAR0132-001	CAPSTAN MOTOR
15			LP30223-003C	LOADING ARM GEAR SHAFT	86			QYTDST2606M	SCREW,X3
16			QYTDST2606Z	SCREW	87			LP30005-008A	BELT,CAPSTAN MOTOR
18			LP30224-001A	LOADING ARM GEAR(SUPPLY)	88			LP40114-011B	IDLER ARM ASSY
19			LP40099-001A	TORSION ARM	89			LP30016-001A	SLIT WASHER
20			LP40100-001A	PIN	90			LP40593-003B	CLUTCH UNIT 3
21			LP40101-007A	POLE BASE ASSY(SUPPLY)	92			PQM30017-47	SLIT WASHER
22			QYSPSTG2606Z	SCREW	93			LP30696-002A	CLUTCH GEAR 4
23			LP40103-002B	LOADING ARM GEAR(TAKE UP)	94			LP30697-003A	COUPLING GEAR
24			LP40099-001A	TORSION ARM	95			LP40554-002A	COMPRESSION SPRING
25			LP40100-001A	PIN	96			LP40442-001A	DIRECT GEAR
26			LP40104-008A	POLE BASE ASSY(TAKE UP)	99			LP40483-002A	COMPRESSION SPRING
27			QYSPSTG2606Z	SCREW	100			LP30016-001A	SLIT WASHER
31			LP20233-004B	ROTARY ENCODER GUIDE	102			LP40484-003B	CHANGE LEVER ASSY
32			QYTPST2606Z	SCREW	103			LP40512-002B	COMPRESSION SPRING
34			LP30226-004D	CONTROL PLATE GUIDE	104			LP30236-002B	IDLER LEVER
35			QYTPST2605Z	SCREW	105			LP20237-003B	REEL DISK ASSY(SUPPLY)
36			LP30249-003B	TAKE UP LEVER	106			LP20238-003B	REEL DISK ASSY(TAKE UP)
37			LP30003-006A	TENSION SPRING	107			LP30017-015A	SPACER,X2
38			LP40119-002A	TAKE UP HEAD	108			QSW0554-003	ROTARY ENCODER
39			LP20234-004B	LID GUIDE	109			QYTPST2620Z	SCREW
40			QYTDST2606Z	SCREW,X2	110			LP30237-002B	CASSETTE GEAR
42			LP40105-001B	PINCH ROLLER ARM ASSY	111			LP30239-002G	LIMIT GEAR(1)
43			LP40478-001A	PINCH ROLLER SHEET2	112			LP30240-002G	LIMIT GEAR(2)
44			LP40148-002A	TORSION SPRING	113			LP40136-001E	TORSION SPRING
46			LP40149-001C	PRESS LEVER ASSY	114			LP30242-002A	RELAY GEAR
47			LP30016-002A	SLIT WASHER	115			LP30339-002E	OPENER GUIDE
49			LP40106-002E	GUIDE ARM ASSY	116			LP40545-001A	TORSION SPRING
50			LP30017-008A	SPACER	117			LP40214-001B	C.H.BRACKET
51			LP40134-001C	TENSION SPRING	118			PQM30017-47	SLIT WASHER,X2
52			QAH0010-004	AC HEAD	119			LP30243-001D	DRIVE GEAR
53			LP30228-001A	HEAD BASE	120			LP20240-001F	DRIVE ARM
54			LP30004-013A	COMPRESSION SPRING,X3	121			LP40137-001A	TORSION SPRING
55			LP40236-001A	COMPRESSION SPRING	122			LP10081-002L	SIDE HOLDER(L)
57			LP40213-002B	SPECIAL SCREW,X3	123			LP10082-002M	SIDE HOLDER(R)
58			QYTDST2608Z	SCREW,X2	124			LP30255-006A	LOCK LEVER(L)
59			QAR0023-001	LOADING MOTOR	127			LP30256-001H	LOCK LEVER(R)
60			PQ43546-1-2	MOTOR PULLEY	128			LP40168-001A	TORSION SPRING(L)
61			LP30230-001B	MOTOR GUIDE	129			LP40218-001B	TORSION SPRING(R)
62			QYTPSP3003Z	SCREW,X2	130			LP30257-001G	CASSETTE HOLDER
63			LP30005-003A	BELT,LOADING MOTOR	132			LP30244-002G	GUIDE RAIL
64			LP20791-002C	CONTROL CAM	134			LP30245-002E	REC SAFETY LEVER
65			PQM30017-24	SLIT WASHER	135			LP30003-004A	TENSION SPRING
66			LP40120-001A	WORM GEAR	137			LP20578-001C	TOP GUIDE
67			LP40107-002A	LINK LEVER ASSY	138			LP30500-001C	HOLD PLATE
68			PQM30017-24	SLIT WASHER	139			LP40450-003A	PAD,X2
69			LP10284-002E	CONTROL PLATE	140			LP30003-025B	TENSION SPRING
70			LP40379-001B	CONTROL BRACKET(1)	141			LP30003-024A	TENSION SPRING
71			QYTDST2608M	SCREW	142			LP40481-003A	ROLLER CAM ASSY
					143			LP30019-014A	PAD,X2
					151			LP20324-003B	DOOR OPENER
					152			LP30493-001A	START SENSOR CAP

5.4 ELECTRICAL PARTS LIST

#	△ REF No.	PART No.	PART NAME, DESCRIPTION

MAIN BOARD ASSEMBLY <03>			
PW1		LPA10106-03C1	MAIN BOARD ASSY
IC1		JCP8020-MSD-2	IC
IC2501		LC85405JE	IC
IC3001		HD6432194BA26F	IC(MCU)
IC3002		S-80727AN-DQ-X	IC
		or R3111H271A	IC
		or S-80827ANUP-W	IC
IC3003		AT24C16-10PC	IC
		or 24LC16B/P	IC
		or BR24C16	IC
IC3004		BA6956AN	IC
IC3501		BA6956AN	IC
IC3601		BU2090FS	IC
IC3651		BU2090FS	IC
IC5101		STR-G6551	IC
IC5301		LA5644	IC
IC6080		NJM2125F	IC
Q5		2SB1218A/QR/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q7		2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
Q8		2SD1819A/QRS/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q9		2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
Q10		2SB1218A/QR/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q17		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q18		2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
Q21		2SB1218A/QR/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q24		2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
Q25		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q38		2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
Q41		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q401		2SA1576A/QR/-X	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
Q402		2SA1576A/QR/-X	TRANSISTOR
Q403		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q404		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q405		2SA1576A/QR/-X	TRANSISTOR
Q2001		2SC4081/QRS/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q2002		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2003		DTA144WU	TRANSISTOR
		or PDA144WU	TRANSISTOR
		or RN2309	TRANSISTOR
		or UN511E	TRANSISTOR
Q2004		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q2011		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q2052		2SA1576A/QR/-X	TRANSISTOR
		or 2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q2053		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q2054		2SA1576A/QR/-X	TRANSISTOR
		or 2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q2061		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2062		2SA1576A/QR/-X	TRANSISTOR
		or 2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q2102		DTC114EU	TRANSISTOR
		or PDC114EU	TRANSISTOR
		or RN1302	TRANSISTOR
		or UN5211	TRANSISTOR
Q2103		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2104		DTA144WU	TRANSISTOR
		or PDA144WU	TRANSISTOR
		or RN2309	TRANSISTOR
		or UN511E	TRANSISTOR
Q2105		DTC144WU	TRANSISTOR
		or PDC144WU	TRANSISTOR
		or UN521E	TRANSISTOR
		or RN1309	TRANSISTOR
Q2108		2SC4081/QRS/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
			or 2PC4081/R/-X	TRANSISTOR				or RN2302	TRANSISTOR
		Q2251	DTA144WU	TRANSISTOR				or PDTA114EU	TRANSISTOR
			or PDTA144WU	TRANSISTOR				or DTA114EU	TRANSISTOR
			or RN2309	TRANSISTOR	Q5306			2SB1239	TRANSISTOR
			or UN511E	TRANSISTOR	Q5310			DTC114EU	TRANSISTOR
		Q2252	DTC114EU	TRANSISTOR				or PDTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR				or UN5211	TRANSISTOR
			or RN1302	TRANSISTOR				or RN1302	TRANSISTOR
			or UN5211	TRANSISTOR	Q5311			2SA1576A/RS/-X	TRANSISTOR
		Q2501	2SC4081/QRS/-X	TRANSISTOR	Q5312			2SD2144S/UV/-T	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR	Q5318			DTA114EU	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR				or PDTA114EU	TRANSISTOR
		Q2502	DTC144WU	TRANSISTOR				or RN2302	TRANSISTOR
			or RN1309	TRANSISTOR				or UN5111	TRANSISTOR
			or UN521E	TRANSISTOR	Q5320			2SB1256	TRANSISTOR
			or PDTC144WU	TRANSISTOR	Q5321			DTC114TU	TRANSISTOR
		Q3001	2SD1819A/QRS/-X	TRANSISTOR				or PDTC114TU	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR				or RN1311	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR				or UN5215	TRANSISTOR
		Q3002	PTZ-NV16	PHOTO TRANSISTOR	Q5322			DTA114EU	TRANSISTOR
			or PTZ-NV16A	PHOTO TRANSISTOR				or PDTA114EU	TRANSISTOR
		Q3003	PTZ-NV16	PHOTO TRANSISTOR				or RN2302	TRANSISTOR
			or PTZ-NV16A	PHOTO TRANSISTOR				or UN5111	TRANSISTOR
		Q3004	2SD1819A/QRS/-X	TRANSISTOR	Q6030			2SB1218A/QR/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR				or 2SA1576A/QR/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR				or 2PA1576/R/-X	TRANSISTOR
		Q3005	2SD1819A/QRS/-X	TRANSISTOR	Q6031			DTC114EU	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR				or PDTC114EU	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR				or UN5211	TRANSISTOR
		Q3007	UN521E	TRANSISTOR				or RN1302	TRANSISTOR
			or RN1309	TRANSISTOR	Q6032			DTC114EU	TRANSISTOR
			or DTC144WU	TRANSISTOR				or PDTC114EU	TRANSISTOR
			or PDTC144WU	TRANSISTOR				or UN5211	TRANSISTOR
		Q3009	UN521E	TRANSISTOR				or RN1302	TRANSISTOR
			or RN1309	TRANSISTOR	Q7201			2SC1317/RS/-T	TRANSISTOR
			or DTC144WU	TRANSISTOR	D3			NRSA02J-0R0X	MG RESISTOR
			or PDTC144WU	TRANSISTOR	D6			MTZJ5.1C	ZENER DIODE
		Q3501	2SD1819A/QRS/-X	TRANSISTOR	D2001			1SS355	DIODE
			or 2SC4081/QRS/-X	TRANSISTOR	D2121			MTZJ8.2C	ZENER DIODE
			or 2PC4081/R/-X	TRANSISTOR	D2201			11ES2	DIODE
		Q4001	UN5211	TRANSISTOR				or 1A3G	DIODE
			or PDTC114EU	TRANSISTOR	D2501			1SS133	DIODE
			or DTC114EU	TRANSISTOR	D3001			LNB2301L01VI	LE DIODE
			or RN1302	TRANSISTOR	D3002			1SS133	DIODE
		Q4002	UN5211	TRANSISTOR	D3003			RD39ES/B3/-T2	ZENER DIODE
			or PDTC114EU	TRANSISTOR				or MTZJ39C	ZENER DIODE
			or RN1302	TRANSISTOR	D3004			11E2-T5	DIODE
			or DTC114EU	TRANSISTOR	D3005			11E2-T5	DIODE
		Q4003	UN5211	TRANSISTOR	D3007			1SS355	DIODE
			or PDTC114EU	TRANSISTOR	D3008			1SS355	DIODE
			or DTC114EU	TRANSISTOR	D4001			1SS355	DIODE
			or RN1302	TRANSISTOR	D4002			1SS355	DIODE
		Q5301	2SB1256	TRANSISTOR	D5001			S1WB/A/60-4102	BRIDGE DIODE
		Q5302	DTC114TU	TRANSISTOR				or S1WB(A)60F4072X	BRIDGE DIODE
			or PDTC114TU	TRANSISTOR				or S1WB/A/60-X	BRIDGE DIODE
			or UN5215	TRANSISTOR	D5101			AU01	FR DIODE
			or RN1311	TRANSISTOR				or ERA18-04-T2	FR DIODE
△		Q5303	2SD2144S/UVW/-T	TRANSISTOR				or 1SR153-400-T2	FR DIODE
		Q5304	2SD1450/ST/-T	TRANSISTOR				or 10ELS4	FR DIODE
			or 2SD1302/ST/-T	TRANSISTOR	D5102			AU01	FR DIODE
		Q5305	UN5111	TRANSISTOR				or ERA18-04-T2	FR DIODE

0Ω, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
		or 10ELS4	FR DIODE	D6002		HZ30-2L-T2	ZENER DIODE
		or 1SR153-400-T2	FR DIODE			or HZ30-2LTD	Z DIODE (M)
D5103		AU01Z	FR DIODE	R1		NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
		or ERA18-02-T2	FR DIODE	R2		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
		or PG104RS	FR DIODE	R5		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 10ELS2	FR DIODE	R6		NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W
		or 1SR153-400-T2	FR DIODE	R7		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
D5201		AK04	DIODE	R8		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 1S4	SB DIODE	R9		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or 11EQS04	SB DIODE	R23		NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W
D5202		FML-12S	FR DIODE	R24		NRSA02J-331X	MG RESISTOR 330Ω, 1/10W
		or FCF06A20	FR DIODE	R25		NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
		or YG901C2	FR DIODE	R26		NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
		or SF5LC20U	FR DIODE	R27		NRSA02J-221X	MG RESISTOR 220Ω, 1/10W
D5206		FMB-24	BARRIER DIODE	R28		NRSA02J-221X	MG RESISTOR 220Ω, 1/10W
		or FSQ05A04B	SB DIODE	R29		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
		or YG801C04	SB DIODE	R30		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or SB640FCT	SB DIODE	R31		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
		or SF5SC4	SB DIODE	R32		NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
D5209		ERA18-02-T2	FR DIODE	R33		NDC21HJ-8R0X	CAPACITOR 8pF, 50V
		or PG104RS	FR DIODE	R34		NDC21HJ-390X	CAPACITOR 39pF, 50V
		or 10ELS2	FR DIODE	R36		NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W
		or 1SR153-400-T2	FR DIODE	R38		NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
D5210		AU01Z	FR DIODE	R40		NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
		or ERA18-02-T2	FR DIODE	R41		NRSA02J-392X	MG RESISTOR 3.9kΩ, 1/10W
		or 10ELS2	FR DIODE	R42		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
		or PG104RS	FR DIODE	R46		NRSA02J-271X	MG RESISTOR 270Ω, 1/10W
		or 1SR153-400-T2	FR DIODE	R48		NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
D5211		AU01Z	FR DIODE	R51		NRSA02J-122X	MG RESISTOR 1.2kΩ, 1/10W
		or ERA18-02-T2	FR DIODE	R54		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
		or 1SR153-400-T2	FR DIODE	R62		NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
		or 10ELS2	FR DIODE	R68		NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
		or PG104RS	FR DIODE	R70		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
D5214		ERA18-02-T2	FR DIODE	R77		NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
		or 1SR153-400-T2	FR DIODE	R84		NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
		or 10ELS2	FR DIODE	R88		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or PG104RS	FR DIODE	R90		NRSA02J-391X	MG RESISTOR 390Ω, 1/10W
D5301		MTZJ15A	ZENER DIODE	R92		NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
		or RD15ES/B1/-T2	ZENER DIODE	R93		NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W
D5302		MTZJ6.8A	ZENER DIODE	R104		NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
		or RD6.8ES/B1/-T2	ZENER DIODE	R113		NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
D5303		MTZJ27C	ZENER DIODE	R114		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
		or RD27ES/B3/-T2	ZENER DIODE	R117		NRSA02J-104X	MG RESISTOR 100kΩ, 1/10W
D5304		1SS133	DIODE	R401		NRSA02J-221X	MG RESISTOR 220Ω, 1/10W
		or 1SS270A	DIODE	R402		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
D5305		11ES2	DIODE	R403		NRSA02J-561X	MG RESISTOR 560Ω, 1/10W
		or 1A3G	DIODE	R404		NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W
		or ERA15-02-T2	DIODE	R405		NRSA02J-683X	MG RESISTOR 68kΩ, 1/10W
D5306		MTZJ12A	ZENER DIODE	R406		NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
		or RD12ES/B1/-T2	ZENER DIODE	R407		NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
D5307		1SS133	DIODE	R408		NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W
		or 1SS270A	DIODE	R409		NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
D5308		1SS133	DIODE	R2001		NRSA02J-681X	MG RESISTOR 680Ω, 1/10W
		or 1SS270A	DIODE	R2002		NRSA02J-272X	MG RESISTOR 2.7kΩ, 1/10W
D5309		1SS133	DIODE	R2003		QRE141J-101Y	RESISTOR 100Ω, 1/4W
		or 1SS270A	DIODE	R2005		QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
D5310		MTZJ11C	ZENER DIODE	R2006		QRE141J-393Y	RESISTOR 39kΩ, 1/4W
		or RD11ES/B3/-T2	ZENER DIODE	R2007		NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W
D5315		11ES2	DIODE	R2008		NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
		or ERA15-02-T2	DIODE	R2009		NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W
		or 1A3G	DIODE	R2010		NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R2011			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R2507			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2012			NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W	R2508			NRSA02J-333X	MG RESISTOR 33kΩ, 1/10W
R2013			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W	R2509			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R2014			NRSA02J-224X	MG RESISTOR 220kΩ, 1/10W	R2510			NRSA02J-104X	MG RESISTOR 100kΩ, 1/10W
R2015			NRSA02J-271X	MG RESISTOR 270Ω, 1/10W	R2511			NRSA02J-124X	MG RESISTOR 120kΩ, 1/10W
R2016			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W	R2512			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2017			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W	R2513			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2018			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R2514			NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W
R2019			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R2519			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2020			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	R2520			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R2053			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R2522			NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
R2056			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W	R3011			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
R2057			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W	R3012			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2058			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W	R3013			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2059			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W	R3016			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
R2060			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W	R3017			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
R2061			NRSA02J-273X	MG RESISTOR 27kΩ, 1/10W	R3018			QRE141J-682Y	RESISTOR 6.8kΩ, 1/4W
R2062			NRSA02J-3R3X	MG RESISTOR 3.3Ω, 1/10W	R3019			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
R2063			NRSA02J-151X	MG RESISTOR 150Ω, 1/10W	R3022			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2064			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W	R3025			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2065			NRSA02J-183X	MG RESISTOR 18kΩ, 1/10W	R3026			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2102			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W	R3027			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2103			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3029			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
R2104			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3030			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
R2105			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R3031			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2106			NRSA02J-681X	MG RESISTOR 680Ω, 1/10W	R3032			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2107			NRSA02J-122X	MG RESISTOR 1.2kΩ, 1/10W	R3038			NRSA02J-152X	MG RESISTOR 1.5kΩ, 1/10W
R2109			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R3040			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2111			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R3041			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
R2121			QRE141J-151Y	RESISTOR 150Ω, 1/4W	R3042			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2202			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R3044			QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
R2203			NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W	R3046			QRE141J-102Y	RESISTOR 1kΩ, 1/4W
R2204			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	R3047			QRE141J-102Y	RESISTOR 1kΩ, 1/4W
R2205			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	R3048			QRE141J-102Y	RESISTOR 1kΩ, 1/4W
R2206			QRE141J-101Y	RESISTOR 100Ω, 1/4W	R3049			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2208			QRE141J-101Y	RESISTOR 100Ω, 1/4W	R3050			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2209			QRE141J-101Y	RESISTOR 100Ω, 1/4W	R3051			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2210			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R3052			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2211			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R3053			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2213			QRE141J-393Y	RESISTOR 39kΩ, 1/4W	R3054			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2215			NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W	R3055			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2217			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R3056			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2218			NRSA02J-393X	MG RESISTOR 39kΩ, 1/10W	R3057			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2219			QRE141J-393Y	RESISTOR 39kΩ, 1/4W	R3058			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
R2220			QRE141J-393Y	RESISTOR 39kΩ, 1/4W	R3059			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2222			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3060			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2223			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3061			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2224			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3062			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2225			NRSA02J-153X	MG RESISTOR 15kΩ, 1/10W	R3063			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
R2226			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3066			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
R2227			NRSA02J-123X	MG RESISTOR 12kΩ, 1/10W	R3069			NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
R2228			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W	R3071			NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
R2229			QRE141J-563Y	RESISTOR 56kΩ, 1/4W	R3072			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2251			NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W	R3073			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2252			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3075			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2501			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W	R3076			NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
R2502			NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W	R3078			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2503			NRSA02J-563X	MG RESISTOR 56kΩ, 1/10W	R3083			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2504			NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W	R3085			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2505			NRSA02J-105X	MG RESISTOR 1MΩ, 1/10W	R3086			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
R2506			NRSA02J-473X	MG RESISTOR 47kΩ, 1/10W	R3087			NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R3088			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4005			NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3089			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4007			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3090			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4008			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3091			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R4009			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3094			QRE141J-0R0Y	RESISTOR 0Ω,1/4W	R4010			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3095			QRE141J-0R0Y	RESISTOR 0Ω,1/4W	R4011			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3096			QRE141J-0R0Y	RESISTOR 0Ω,1/4W	R4012			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R3097			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4013			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3103			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W	R4014			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3105			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R4015			NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
R3106			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R4016			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3201			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R4017			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3202			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R4018			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3203			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R4019			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3204			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	R4020			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3205			QRE141J-181Y	RESISTOR 180Ω,1/4W	R4021			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3206			QRE141J-183Y	RESISTOR 18kΩ,1/4W	R5101			QRG02GJ-104	OMF RESISTOR 100kΩ,2W
R3207			NRSA02J-183X	MG RESISTOR 18kΩ,1/10W	R5102			QRE141J-390Y	RESISTOR 39Ω,1/4W
R3208			NRSA02J-181X	MG RESISTOR 180Ω,1/10W	R5103			NRSA02J-681X	MG RESISTOR 680Ω,1/10W
R3209			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W	R5104			QRG029J-154G	OMF RESISTOR 150kΩ,2W
R3210			NRSA02J-181X	MG RESISTOR 180Ω,1/10W	R5105			QRT01DJ-R39X	MF RESISTOR 0.39Ω,1W
R3211			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W	R5106			NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R3212			NRSA02J-474X	MG RESISTOR 470kΩ,1/10W	R5301			QRE141J-1R0Y	RESISTOR 1Ω,1/4W
R3213			NRSA02J-334X	MG RESISTOR 330kΩ,1/10W	R5302			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3214			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5303			NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R3215			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	△ R5304			QRZ9005-221X	FUSI RESISTOR 220Ω,1/4W
R3216			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5305			NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R3217			NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W	R5306			NRSA02J-683X	MG RESISTOR 68kΩ,1/10W
R3218			QRE141J-472Y	RESISTOR 4.7kΩ,1/4W	R5307			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3219			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5308			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3220			NRSA02J-104X	MG RESISTOR 100kΩ,1/10W	R5309			QRE141J-222Y	RESISTOR 2.2kΩ,1/4W
R3222			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5310			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3223			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5311			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R3224			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5313			QRE141J-222Y	RESISTOR 2.2kΩ,1/4W
R3225			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5314			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3229			NRSA02J-105X	MG RESISTOR 1MΩ,1/10W	R5317			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R3230			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5318			NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R3231			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	R5319			QRE141J-221Y	RESISTOR 220Ω,1/4W
R3233			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5321			QRE141J-221Y	RESISTOR 220Ω,1/4W
R3234			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5322			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R3235			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	R5323			NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R3236			NRSA02J-332X	MG RESISTOR 3.3kΩ,1/10W	R5327			NRVA02D-303X	CMF RESISTOR 30kΩ,1/10W
R3237			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5329			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3238			QRE141J-103Y	RESISTOR 10kΩ,1/4W	R5330			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3239			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5332			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3241			NRSA02J-104X	MG RESISTOR 100kΩ,1/10W	R5334			QRE141J-103Y	RESISTOR 10kΩ,1/4W
R3242			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R5335			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3244			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R5336			NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R3251			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R6020			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3501			NRSA02J-153X	MG RESISTOR 15kΩ,1/10W	R6021			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3502			NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W	R6022			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3503			NRSA02J-153X	MG RESISTOR 15kΩ,1/10W	R6030			NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3504			NRSA02J-223X	MG RESISTOR 22kΩ,1/10W	R6031			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R3505			NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W	R6032			NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
R3506			NRSA02J-123X	MG RESISTOR 12kΩ,1/10W	R6033			NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
R3671			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R6050			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R3672			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R6051			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R3673			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W	R6052			NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R4001			NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W	R6060			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R4003			NRSA02J-561X	MG RESISTOR 560Ω,1/10W	R6061			NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R4004			NRSA02J-561X	MG RESISTOR 560Ω,1/10W	R6508			NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
R6510			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C103		NCB21HK-103X	CAPACITOR	0.01μF,50V
R6553			QRE141J-471Y	RESISTOR	470Ω, 1/4W	C106		NCB21HK-821X	CAPACITOR	820pF,50V
R6554			QRE141J-471Y	RESISTOR	470Ω, 1/4W	C108		NDC21HJ-680X	CAPACITOR	68pF,50V
R7202			NRSA02J-221X	MG RESISTOR	220Ω, 1/10W	C109		NCB21CK-224X	CAPACITOR	0.22μF,16V
R7203			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	C110		NDC21HJ-820X	CAPACITOR	82pF,50V
R7204			QRE121J-100Y	RESISTOR	10Ω, 1/2W	C114		NDC21HJ-181X	CAPACITOR	180pF,50V
R7251			NRSA02J-750X	MG RESISTOR	75Ω,1/10W	C401		NCB21HK-103X	CAPACITOR	0.01μF,50V
R7252			NRSA02J-750X	MG RESISTOR	75Ω,1/10W	C402		NCB21HK-223X	CAPACITOR	0.022μF,50V
R7253			NRSA02J-750X	MG RESISTOR	75Ω,1/10W	C403		NDC21HJ-131X	CAPACITOR	130pF,50V
C1			NCB21EK-104X	CAPACITOR	0.1μF,25V	C404		NDC21HJ-470X	CAPACITOR	47pF,50V
C2			NCB21EK-104X	CAPACITOR	0.1μF,25V	C406		NCB21HK-102X	CAPACITOR	0.001μF,50V
C3			NCB21EK-104X	CAPACITOR	0.1μF,25V	C407		NDC21HJ-150X	CAPACITOR	15pF,50V
C4			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2001		QTE1H44-475Z	E CAPACITOR	4.7μF,50V
C5			QEK00JM-337	E CAPACITOR	330μF,6.3V	C2002		QEKJ1CM-106	E CAPACITOR	10μF,16V
C6			NCB11EK-104X	CAPACITOR	0.1μF,25V	C2003		QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C7			NCB21HK-102X	CAPACITOR	0.001μF,50V	C2004		NCB21HK-103X	CAPACITOR	0.01μF,50V
C8			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2005		QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C9			QETN1HM-225	E CAPACITOR	2.2μF,50V	C2006		NCB21HK-123X	CAPACITOR	0.012μF,50V
C10			NDC21HJ-151X	CAPACITOR	150pF,50V	C2007		QEKJ1CM-226	E CAPACITOR	22μF,16V
C11			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2008		QERF1EM-475	E CAPACITOR	4.7μF,25V
C14			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2009		NCB21HK-102X	CAPACITOR	0.001μF,50V
C15			NCB21EK-103X	CAPACITOR	0.01μF,25V	C2010		NCB21HK-152X	CAPACITOR	0.0015μF,50V
C16			NCB11EK-104X	CAPACITOR	0.1μF,25V	C2011		QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C17			QEKJ1HM-335	E CAPACITOR	3.3μF,50V	C2012		QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C18			QEKJ1HM-105	E CAPACITOR	1μF,50V	C2013		NCB21HK-331X	CAPACITOR	330pF,50V
C19			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C2021		NCB21HK-682X	CAPACITOR	0.0068μF,50V
C20			QEKJ1HM-105	E CAPACITOR	1μF,50V	C2051		NCB21HK-331X	CAPACITOR	330pF,50V
C21			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2061		QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V
C22			QEKJ0JM-227	E CAPACITOR	220μF,6.3V	C2062		NCB21HK-332X	CAPACITOR	0.0033μF,50V
C23			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2063		NCB21HK-103X	CAPACITOR	0.01μF,50V
C24			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2064		QEKJ1CM-106	E CAPACITOR	10μF,16V
C25			NDC21HJ-6R0X	CAPACITOR	6pF,50V	C2101		QEKJ1CM-106	E CAPACITOR	10μF,16V
C26			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2102		QEKJ1CM-106	E CAPACITOR	10μF,16V
C27			NCB21HK-223X	CAPACITOR	0.022μF,50V	C2104		NCB21CK-104X	CAPACITOR	0.1μF,16V
C28			QEKJ1HM-335	E CAPACITOR	3.3μF,50V	C2202		NCB21EK-333X	CAPACITOR	0.033μF,25V
C29			NCB21EK-333X	CAPACITOR	0.033μF,25V	C2203		QEKJ1CM-106	E CAPACITOR	10μF,16V
C30			NCB21CK-474X	CAPACITOR	0.47μF,16V	C2204		QDGB1HK-102Y	CAPACITOR	0.001μF,50V
C31			QEKJ0JM-107	E CAPACITOR	100μF,6.3V	C2205		QEKJ1HM-105	E CAPACITOR	1μF,50V
C32			QCB1HK-103	CAPACITOR	0.01μF,50V	C2206		QEKJ1CM-106	E CAPACITOR	10μF,16V
C33			QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C2207		QTE1E41-476	E CAPACITOR	47μF,25V
C34			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2208		QTE1H44-475Z	E CAPACITOR	4.7μF,50V
C35			NCB21HK-103X	CAPACITOR	0.01μF,50V	C2209		QERF1HM-104	E CAPACITOR	0.1μF,50V
C36			QEKJ1EM-475	E CAPACITOR	4.7μF,25V	C2210		QEKJ1HM-104	E CAPACITOR	0.1μF,50V
C37			NCB21AK-105X	CAPACITOR	1μF,10V	C2211		QERF1HM-105	E CAPACITOR	1μF,50V
C38			QEKJ0JM-337	E CAPACITOR	330μF,6.3V	C2212		QEKJ1HM-105	E CAPACITOR	1μF,50V
C39			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2213		QEKJ1CM-106	E CAPACITOR	10μF,16V
C40			QEKJ1CM-106	E CAPACITOR	10μF,16V	C2214		QEKJ1CM-106	E CAPACITOR	10μF,16V
C45			QCFB1HZ-104	CAPACITOR	0.1μF,50V	C2215		QERF1EM-475	E CAPACITOR	4.7μF,25V
C53			NDC21HJ-101X	CAPACITOR	100pF,50V	C2216		QEKJ1HM-474	E CAPACITOR	0.47μF,50V
C59			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2217		QEKJ1CM-106	E CAPACITOR	10μF,16V
C60			QEKJ0JM-227	E CAPACITOR	220μF,6.3V	C2218		QEKJ1HM-474	E CAPACITOR	0.47μF,50V
C61			NCB21HK-103X	CAPACITOR	0.01μF,50V	C2219		QEKJ1CM-106	E CAPACITOR	10μF,16V
C63			NCB21EK-104X	CAPACITOR	0.1μF,25V	C2220		QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C64			NDC21HJ-220X	CAPACITOR	22pF,50V	C2221		NCB21HK-103X	CAPACITOR	0.01μF,50V
C65			QEKJ1HM-105	E CAPACITOR	1μF,50V	C2222		QEKJ1HM-474	E CAPACITOR	0.47μF,50V
C72			NDC21HJ-470X	CAPACITOR	47pF,50V	C2223		QEKJ1HM-474	E CAPACITOR	0.47μF,50V
C73			NDC21HJ-120X	CAPACITOR	12pF,50V	C2224		NCB21HK-103X	CAPACITOR	0.01μF,50V
C80			NCB21HK-103X	CAPACITOR	0.01μF,50V	C2225		QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C84			NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W	C2226		QEKJ1CM-106	E CAPACITOR	10μF,16V
C93			NDC21HJ-220X	CAPACITOR	22pF,50V	C2227		NCB21CK-104X	CAPACITOR	0.1μF,16V
C94			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	C2228		NCB21CK-104X	CAPACITOR	0.1μF,16V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C2229		NDC21HJ-101X	CAPACITOR 100pF,50V	C4015		NDC21HJ-331X	CAPACITOR 330pF,50V
C2230		NDC21HJ-101X	CAPACITOR 100pF,50V	C4016		NDC21HJ-681X	CAPACITOR 680pF,50V
C2251		QEKJ1CM-476	E CAPACITOR 47μF,16V	C4017		NCB21HK-222X	CAPACITOR 0.0022μF,50V
C2252		NCB21HK-103X	CAPACITOR 0.01μF,50V	△ C5001		QFZ9073-683	F CAPACITOR 0.068μF,250V
C2253		NCB21CK-104X	CAPACITOR 0.1μF,16V	△ C5002		QFZ9051-333	F CAPACITOR 0.033μF,250V
C2254		NCB21CK-104X	CAPACITOR 0.1μF,16V	△ C5004		QCZ9071-222	CAPACITOR 0.0022μF,250V
C2255		NDC21HJ-181X	CAPACITOR 180pF,50V	C5006		QEZO375-686	E CAPACITOR 68μF,400V
C2501		QERF0JM-107	E CAPACITOR 100μF,6.3V	C5101		QCZO212-472	CAPACITOR 0.0047μF,1kV
C2502		NCB21HK-562X	CAPACITOR 0.0056μF,50V	C5102		QEMU1VM-276	E CAPACITOR 27μF,35V
C2503		QERF1HM-105	E CAPACITOR 1μF,50V	C5103		QCZO302-330Z	CAPACITOR 33pF,1kV
C2505		QEKJ0JM-107	E CAPACITOR 100μF,6.3V	C5104		QFLC1HJ-471Z	F CAPACITOR 470pF,50V
C2506		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5201		QEMU0JM-227	E CAPACITOR 220μF,6.3V
C2507		QERF1CM-226	E CAPACITOR 22μF,16V	C5202		QEMT1CM-827	E CAPACITOR 820μF,16V
C2508		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5203		QEMT1AM-228	E CAPACITOR 2200μF,10V
C2509		QERF1CM-106	E CAPACITOR 10μF,16V	C5204		QETN2AM-475	E CAPACITOR 4.7μF,100V
C2510		QEKJ1CM-476	E CAPACITOR 47μF,16V	C5205		QETN1HM-106	E CAPACITOR 10μF,50V
C2511		NCB21HK-222X	CAPACITOR 0.0022μF,50V	C5206		QEMU1EM-187	E CAPACITOR 180μF,25V
C2512		NDC21HJ-331X	CAPACITOR 330pF,50V	C5207		QETN1CM-227	E CAPACITOR 220μF,16V
C2513		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5208		QETN1AM-227	E CAPACITOR 220μF,10V
C2518		NCB21HK-102X	CAPACITOR 0.001μF,50V	C5212		QEMU1VM-127	E CAPACITOR 120μF,35V
C2519		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5213		QEMU0JM-227	E CAPACITOR 220μF,6.3V
C2520		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5301		QETM0JM-108	E CAPACITOR 1000μF,6.3V
C3001		NCB21EK-104X	CAPACITOR 0.1μF,25V	C5303		QETN1CM-107	E CAPACITOR 100μF,16V
C3002		NCB21HK-103X	CAPACITOR 0.01μF,50V	C5304		QFVF1HJ-274Z	F CAPACITOR 0.27μF,50V
C3003		QEKJ1CM-106	E CAPACITOR 10μF,16V	C5305		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3004		NCB21EK-104X	CAPACITOR 0.1μF,25V	C5306		QEKJ0JM-107	E CAPACITOR 100μF,6.3V
C3008		NCB21HK-102X	CAPACITOR 0.001μF,50V	C5307		QEKJ0JM-476	E CAPACITOR 47μF,6.3V
C3010		QEZO244-229	EDL CAPACITOR 0.0022F,5.5V	C5308		QETN1CM-107	E CAPACITOR 100μF,16V
C3012		QEKJ0JM-107	E CAPACITOR 100μF,6.3V	C5309		QETN1CM-107	E CAPACITOR 100μF,16V
C3015		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6006		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3016		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6007		QEMU0JM-227	E CAPACITOR 220μF,6.3V
C3022		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6008		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3024		NDC21HJ-220X	CAPACITOR 22pF,50V	C6012		QEKJ1CM-107	E CAPACITOR 100μF,16V
C3025		QAT3725-300Z	TRIM CAPACITOR,TIMER CLOCK	C6013		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3026		NCB21HK-103X	CAPACITOR 0.01μF,50V	C6014		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3027		NBE20JM-106X	T CAPACITOR 10μF,6.3V	C6016		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3030		NBE20JM-226X	T CAPACITOR 22μF,6.3V	C6023		NCB21HK-103X	CAPACITOR 0.01μF,50V
C3031		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6032		NCF21EZ-473X	CAPACITOR 0.047μF,25V
C3032		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6033		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
C3033		NCB21EK-104X	CAPACITOR 0.1μF,25V	C6037		NBE20JM-106X	T CAPACITOR 10μF,6.3V
C3036		NDC21HJ-180X	CAPACITOR 18pF,50V	C6055		NDC21HJ-220X	CAPACITOR 22pF,50V
C3037		NDC21HJ-120X	CAPACITOR 12pF,50V	C6555		NDC21HJ-1R0X	CAPACITOR 1pF,50V
C3040		QDYB1CM-103Y	CAPACITOR 0.01μF,16V	C7202		QETJ0JM-477	E CAPACITOR 470μF,6.3V
C3042		QETJ0JM-477	E CAPACITOR 470μF,6.3V	C7251		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
C3501		NCB21EK-104X	CAPACITOR 0.1μF,25V	L1		QQL29BJ-100Z	COIL 10μH
C3502		QEKJ1CM-106	E CAPACITOR 10μF,16V	L3		QQL29BJ-100Z	COIL 10μH
C3503		NCB21HK-103X	CAPACITOR 0.01μF,50V	L4		QQL29BJ-100Z	COIL 10μH
C3602		NCB21EK-104X	CAPACITOR 0.1μF,25V	L5		QQR0657-019Z	NOISE FILTER
C3652		NCB21EK-104X	CAPACITOR 0.1μF,25V	L12		QQR0967-001	COIL 12μH
C4002		NCB21EK-104X	CAPACITOR 0.1μF,25V	L13		QQL071J-330Y	COIL 33μH
C4003		NCB21HK-102X	CAPACITOR 0.001μF,50V	L15		QQL29BJ-100Z	COIL 10μH
C4004		NBE20JM-226X	T CAPACITOR 22μF,6.3V	L17		QQL071J-5R6Y	COIL 5.6μH
C4006		NBE40JM-476X	T CAPACITOR 47μF,6.3V	L18		QQL071J-220Y	COIL 22μH
C4007		NCB21HK-102X	CAPACITOR 0.001μF,50V	L19		QQL071J-120Y	COIL 12μH
C4008		NCB21AK-105X	CAPACITOR 1μF,10V	L20		QQL071J-680Y	COIL 68μH
C4009		NCB21HK-563X	CAPACITOR 0.056μF,50V	L24		QQL071J-270Y	COIL 27μH
C4010		NCB21EK-223X	CAPACITOR 0.022μF,25V	L27		QQL071J-330Y	COIL 33μH
C4011		NCB21EK-104X	CAPACITOR 0.1μF,25V	L28		QQL071J-680Y	COIL 68μH
C4012		NCB21EK-224X	CAPACITOR 0.22μF,25V	L401		QQL071J-150Y	COIL 15μH
C4013		NCB21HK-563X	CAPACITOR 0.056μF,50V	L2251		QQL29BJ-100Z	COIL 10μH
C4014		NDC21HJ-101X	CAPACITOR 100pF,50V	L2252		QQL29BJ-151Z	COIL 150μH

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			L2501	QQL29BJ-2R2Z	COIL	2.2μH			CN3004	QGB2534J2-04	CONNECTOR,(1-4)ROTARY ENCODER
			L5201	PELN1184	COIL	33μH			CN3011	QGF1207C1-14	FPC CONNECTOR,(1-14)FRONT
			L5202	PU60944-330K	COIL	33μH			CN3501	QGB2011L2-06	CONNECTOR,(1-6)DD MDA
			L6002	QQL29BJ-100Z	COIL	10μH	△		CN5001	QGA7901C3-02	CONNECTOR,(1-2)AC IN
			L6004	QQL29BJ-100Z	COIL	10μH	△		CP4001	ICP-N25	CIRCUIT PROTECTOR
			L6005	QQL29BJ-100Z	COIL	10μH	△		CP5301	ICP-N38	CIRCUIT PROTECTOR
			L6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W	△		CP5302	ICP-N25	CIRCUIT PROTECTOR
			L7201	QQL01BJ-101Z	COIL	100μH	△		F5001	QMF51E2-2R0J1	FUSE T2.0A,AC250V
			LPF2501	PELN1137	LOW PASS FILTER						
			CF2501	QAX0399-001Z	RESONATOR						
			LC2501	QQL29BJ-100Z	COIL	10μH					
			X1	QAX0576-001	CRYSTAL RESONATOR						
			X2	QCB1HK-103	CAPACITOR	0.01μF,50V					
			X3001	QAX0445-001	CRYSTAL RESONATOR						
			X3002	QAX0527-001	CRYSTAL RESONATOR						
			S3002	QSW0695-001	PUSH SWITCH,S CASS SW						
			K2251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W			PW1	LPA10105-01C	3D DIGITAL/2M BOARD ASSY
			K2252	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W			IC1401	JCP8026	IC
			K2253	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W			Q1401	2SC1317/RS/-T	TRANSISTOR
			K5101	QQR0678-001Z	FERRITE BEAD				Q1402	2SA1576A/QR/-X	TRANSISTOR
			K5102	QQR0678-001Z	FERRITE BEAD					or 2PA1576/R/-X	TRANSISTOR
			K5201	QQR0678-001Z	FERRITE BEAD				Q1403	2SA1576A/QR/-X	TRANSISTOR
			PC3001	GP3S123	IC(PHOTO SENSOR)					or 2PA1576/R/-X	TRANSISTOR
			PC3002	GP3S123	IC(PHOTO SENSOR)				Q1404	DTC144WU	TRANSISTOR
△			PC5101	PC123F2	PH COUPLER					or RN1309	TRANSISTOR
			T2052	PELN0861	OSC TRANSFORMER					or UN521E	TRANSISTOR
△			T5001	QQS0057-001	SW TRANSFORMER				Q1406	2SA1576A/QR/-X	TRANSISTOR
			TU6001	QAU0151-001	TUNER					or 2PA1576/R/-X	TRANSISTOR
			ET1	PQ21623-1-5	EARTH PLATE(RF)				Q1407	2SA1576A/QR/-X	TRANSISTOR
			ET2	LP40658-001B	EARTH PLATE(1)					or 2PA1576/R/-X	TRANSISTOR
			HS1	LP40621-001A	HEAT SINK,IC5101				Q1408	2SC4081/S/-X	TRANSISTOR
			HS2	LP40479-001B	HEAT SINK,IC5301				Q1410	2SC4081/QRS/-X	TRANSISTOR
			SD1	LP30720-001A	SHIELD CASE(PRE/REC)					or 2PC4081/R/-X	TRANSISTOR
			OT1	QYTDSF3010Z	SCREW,X2				Q1412	2SC4081/QRS/-X	TRANSISTOR
			OT2	PU59915-107	#500SPACER0.007,WR1					or 2PC4081/R/-X	TRANSISTOR
			OT3	PU59915-105	#500SPACER0.01,C45				Q1413	2SA1576A/QR/-X	TRANSISTOR
			OT4	PU59915-107	#500SPACER0.007,WR13-WR11					or 2PA1576/R/-X	TRANSISTOR
			OT5	PU59915-107	#500SPACER0.007,WR14				Q1414	DTC144WU	TRANSISTOR
			OT6	QYTDST3008Z	SCREW,IC5101					or UN521E	TRANSISTOR
			OT7	QYTDST3006Z	SCREW,IC5301					or RN1309	TRANSISTOR
			WR1	QUB351-10AZA	SIN TWIST WIRE				Q1417	2SC4081/QRS/-X	TRANSISTOR
			WR13	QUB371-26A4ZA	SIN TWIST WIRE					or 2PC4081/R/-X	TRANSISTOR
			WR14	QUB372-09A4ZA	SIN TWIST WIRE				Q1418	2SA1576A/QR/-X	TRANSISTOR
			WR101	QRE141J-0R0	RESISTOR,M/I	0Ω,1/4W				or 2PA1576/R/-X	TRANSISTOR
			FC5001	QNG0006-001Z	FUSE CLIP,F5001				Q1419	DTC124TU	TRANSISTOR
			FC5002	QNG0006-001Z	FUSE CLIP,F5001				Q1420	2SC4081/QRS/-X	TRANSISTOR
△			LF5001	PELN1204-01-01	LINE FILTER					or 2PC4081/R/-X	TRANSISTOR
△			LF5002	QQR0608-001	LINE FILTER				D1401	RD4.3ES/B2/-T2	ZENER DIODE
			CN1	QGF1028C1-13	FPC CONNECTOR,(4-16)U.DRUM					or MTZJ4.3B	ZENER DIODE
			CN901	QGF1207C1-04	FPC CONNECTOR,(1-4)FRONT S IN				D1402	1SS133	DIODE
			CN902	QGF1207C1-05	FPC CONNECTOR,(1-5)F_IN					or 1N4148M	DIODE
			CN903	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL				R1401	NRSA02J-181X	MG RESISTOR 180Ω,1/10W
			CN904	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL				R1402	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
			CN905	QGB2024K1-05S	CONNECTOR,(1-5)TERMINAL				R1404	NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
			CN907	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL				R1406	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
			CN2001	QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD				R1407	NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
			CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD				R1408	NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
			CN2051	QGB2024K1-04S	CONNECTOR,(1-4)AUDIO ERASE				R1410	NRSA02J-391X	MG RESISTOR 390Ω,1/10W
			CN3001	QGF1207C1-05	FPC CONNECTOR,(1-5)DRUM MDA				R1411	NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
			CN3002	QGB2532J1-02	CONNECTOR,(1-2)LOADING MOTOR				R1413	NRSA02J-331X	MG RESISTOR 330Ω,1/10W
			CN3003	QGB2015M2-08	CONNECTOR,(1-8)CAPSTAN MOTOR				R1414	NRSA02J-821X	MG RESISTOR 820Ω,1/10W

3D DIGITAL/2M BOARD ASSEMBLY <05>

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R1415		NRSA02J-221X	MG RESISTOR 220Ω,1/10W	C1432		NCF21CZ-105X	CAPACITOR 1μF,16V
R1416		NRSA02J-104X	MG RESISTOR 100kΩ,1/10W	C1433		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1417		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	C1435		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1418		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	C1436		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1421		NRSA02J-391X	MG RESISTOR 390Ω,1/10W	C1437		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1426		NRSA02J-561X	MG RESISTOR 560Ω,1/10W	C1438		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1427		NRSA02J-333X	MG RESISTOR 33kΩ,1/10W	C1439		NCF21CZ-105X	CAPACITOR 1μF,16V
R1428		NRSA02J-393X	MG RESISTOR 39kΩ,1/10W	C1440		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1429		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W	C1441		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1430		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W	C1442		NCF21CZ-105X	CAPACITOR 1μF,16V
R1431		NRSA02J-821X	MG RESISTOR 820Ω,1/10W	C1444		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1432		NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W	C1445		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1433		NRSA02J-510X	MG RESISTOR 51Ω,1/10W	C1446		QEKJ0JM-107	E CAPACITOR 100μF,6.3V
R1434		NRSA02J-153X	MG RESISTOR 15kΩ,1/10W	C1447		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1435		NRSA02J-223X	MG RESISTOR 22kΩ,1/10W	C1448		QEKJ0JM-337	E CAPACITOR 330μF,6.3V
R1436		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W	C1449		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1437		NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W	C1450		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1438		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W	C1451		QEKJ1EM-475	E CAPACITOR 4.7μF,25V
R1439		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W	C1452		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1440		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W	C1453		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1441		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W	C1454		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1442		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W	C1455		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1446		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1459		NDC21HJ-470X	CAPACITOR 47pF,50V
R1447		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1460		NDC21HJ-470X	CAPACITOR 47pF,50V
R1448		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1461		NDC21HJ-470X	CAPACITOR 47pF,50V
R1449		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1462		NDC21HJ-470X	CAPACITOR 47pF,50V
R1450		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1463		QEKJ0JM-336	E CAPACITOR 33μF,6.3V
R1452		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	C1465		NDC21HJ-470X	CAPACITOR 47pF,50V
R1453		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1466		NDC21HJ-470X	CAPACITOR 47pF,50V
R1454		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W	C1467		NDC21HJ-470X	CAPACITOR 47pF,50V
R1455		NRSA02J-681X	MG RESISTOR 680Ω,1/10W	C1468		NDC21HJ-101X	CAPACITOR 100pF,50V
R1458		NRSA02J-681X	MG RESISTOR 680Ω,1/10W	C1470		NDC21HJ-330X	CAPACITOR 33pF,50V
R1459		NRSA02J-681X	MG RESISTOR 680Ω,1/10W	C1471		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1460		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W	C1472		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1461		NRSA02J-121X	MG RESISTOR 120Ω,1/10W	C1473		NCF21EZ-104X	CAPACITOR 0.1μF,25V
R1463		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	L1401		QQL29BJ-100Z	COIL 10μH
VR1401		QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ	L1402		QQL071J-6R8Y	COIL 6.8μH
C1401		QEKJ1CM-336	E CAPACITOR 33μF,16V	L1403		QQL071J-6R8Y	COIL 6.8μH
C1402		NCB21HK-103X	CAPACITOR 0.01μF,50V	L1404		QQL071J-6R8Y	COIL 6.8μH
C1403		QEKJ0JM-337	E CAPACITOR 330μF,6.3V	L1405		QQL29BJ-100Z	COIL 10μH
C1404		NCF21EZ-104X	CAPACITOR 0.1μF,25V	L1406		QQL071J-330Y	COIL 33μH
C1405		NCF21EZ-104X	CAPACITOR 0.1μF,25V	L1407		QQL29BJ-100Z	COIL 10μH
C1406		NCB21HK-103X	CAPACITOR 0.01μF,50V	L1409		QQL071J-1R0Y	COIL 1μH
C1407		NDC21HJ-680X	CAPACITOR 68pF,50V	LC1401		QQR0657-013Z	NOISE FILTER
C1408		NDC21HJ-330X	CAPACITOR 33pF,50V	LC1402		QQR0657-010Z	NOISE FILTER
C1410		QEKJ1EM-475	E CAPACITOR 4.7μF,25V	SD1		LP30706-001B	SHIELD FRAME(S-VHS)
C1411		NCF21EZ-104X	CAPACITOR 0.1μF,25V	SD2		LP30684-001A	SHIELD CASE(S-VHS)
C1412		NDC21HJ-680X	CAPACITOR 68pF,50V	CN1401		QGG2502K1-17	HEADER PIN,(1-7)MAIN
C1413		NDC21HJ-330X	CAPACITOR 33pF,50V	*****			
C1415		NCF21EZ-104X	CAPACITOR 0.1μF,25V	*****			
C1416		QEKJ1CM-106	E CAPACITOR 10μF,16V	*****			
C1417		NCF21EZ-104X	CAPACITOR 0.1μF,25V	*****			
C1421		NDC21HJ-330X	CAPACITOR 33pF,50V	*****			
C1422		NDC21HJ-680X	CAPACITOR 68pF,50V	*****			
C1423		NCF21EZ-104X	CAPACITOR 0.1μF,25V	*****			
C1424		NCB21HK-103X	CAPACITOR 0.01μF,50V	*****			
C1425		NCB21HK-103X	CAPACITOR 0.01μF,50V	*****			
C1426		NDC21HJ-390X	CAPACITOR 39pF,50V	*****			
C1428		NDC21HJ-220X	CAPACITOR 22pF,50V	*****			
C1429		QEKJ0JM-337	E CAPACITOR 330μF,6.3V	*****			
C1430		NCF21EZ-104X	CAPACITOR 0.1μF,25V	*****			

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			Q901	UN5211	TRANSISTOR				R914	NQL402M-100X	COIL 10μH
				or PDTC114EU	TRANSISTOR				R915	NQL402M-100X	COIL 10μH
				or RN1302	TRANSISTOR				R916	NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
				or DTC114EU	TRANSISTOR				R917	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
			Q902	2SB1218A/QR/-X	TRANSISTOR				R918	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
				or 2SA1576A/QR/-X	TRANSISTOR				R919	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or 2PA1576/R/-X	TRANSISTOR				R920	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
			Q903	2SB1218A/QR/-X	TRANSISTOR				R921	QRE123J-391X	RESISTOR 390Ω, 1/2W
				or 2PA1576/R/-X	TRANSISTOR				R922	QRE123J-391X	RESISTOR 390Ω, 1/2W
				or 2SA1576A/QR/-X	TRANSISTOR				R923	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W
			Q904	2SB1218A/QR/-X	TRANSISTOR				R924	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W
				or 2SA1576A/QR/-X	TRANSISTOR				R931	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or 2PA1576/R/-X	TRANSISTOR				R932	NRSA02J-511X	MG RESISTOR 510Ω, 1/10W
			Q905	2SD1819A/QRS/-X	TRANSISTOR				R933	NRSA02J-471X	MG RESISTOR 470Ω, 1/10W
				or 2PC4081/R/-X	TRANSISTOR				R934	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or 2SC4081/QRS/-X	TRANSISTOR				R935	QRE141J-101Y	RESISTOR 100Ω, 1/4W
			Q906	2SD1819A/QRS/-X	TRANSISTOR				R936	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or 2SC4081/QRS/-X	TRANSISTOR				R937	QRE141J-101Y	RESISTOR 100Ω, 1/4W
				or 2PC4081/R/-X	TRANSISTOR				R938	QRE141J-101Y	RESISTOR 100Ω, 1/4W
			Q907	2SD1819A/QRS/-X	TRANSISTOR				R939	QRE141J-101Y	RESISTOR 100Ω, 1/4W
				or 2PC4081/R/-X	TRANSISTOR				R940	NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W
				or 2SC4081/QRS/-X	TRANSISTOR				R941	NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W
			Q908	2SB1218A/QR/-X	TRANSISTOR				R942	NRSA02J-472X	MG RESISTOR 4.7kΩ, 1/10W
				or 2SA1576A/QR/-X	TRANSISTOR				R943	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
				or 2PA1576/R/-X	TRANSISTOR				R944	NRSA02J-272X	MG RESISTOR 2.7kΩ, 1/10W
			Q909	2SB1218A/QR/-X	TRANSISTOR				R945	NRSA02J-102X	MG RESISTOR 1kΩ, 1/10W
				or 2PA1576/R/-X	TRANSISTOR				R946	NRSA02J-561X	MG RESISTOR 560Ω, 1/10W
				or 2SA1576A/QR/-X	TRANSISTOR				R947	NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W
			Q911	UN521E	TRANSISTOR				R949	QRE123J-331X	RESISTOR 330Ω, 1/2W
				or PDTC144WU	TRANSISTOR				R951	NRSA02J-332X	MG RESISTOR 3.3kΩ, 1/10W
				or DTC144WU	TRANSISTOR				R952	NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W
				or RN1309	TRANSISTOR				R953	NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W
			Q912	UN5215	TRANSISTOR				R964	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or PDTC114TU	TRANSISTOR				R965	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W
				or RN1311	TRANSISTOR				C201	QEKJ0JM-227	E CAPACITOR 220μF, 6.3V
				or DTC114TU	TRANSISTOR				C204	NDC21HJ-100X	CAPACITOR 10pF, 50V
			D201	QRE141J-152Y	RESISTOR 1.5kΩ, 1/4W				C206	NDC21HJ-330X	CAPACITOR 33pF, 50V
			D205	1SS133	DIODE				C207	NDC21HJ-330X	CAPACITOR 33pF, 50V
			R202	NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W				C209	NCB21CK-474X	CAPACITOR 0.47μF, 16V
			R208	NRSA02J-222X	MG RESISTOR 2.2kΩ, 1/10W				C210	NDC21HJ-101X	CAPACITOR 100pF, 50V
			R209	NRSA02J-682X	MG RESISTOR 6.8kΩ, 1/10W				C211	NDC21HJ-101X	CAPACITOR 100pF, 50V
			R210	NRSA02J-182X	MG RESISTOR 1.8kΩ, 1/10W				C212	NCB21EK-104X	CAPACITOR 0.1μF, 25V
			R211	NRSA02J-562X	MG RESISTOR 5.6kΩ, 1/10W				C213	QEKJ1EM-475	E CAPACITOR 4.7μF, 25V
			R212	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W				C214	NCB21CK-224X	CAPACITOR 0.22μF, 16V
			R213	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W				C215	NCB21CK-224X	CAPACITOR 0.22μF, 16V
			R214	NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W				C216	QEKJ0JM-227	E CAPACITOR 220μF, 6.3V
			R216	NRSA02J-103X	MG RESISTOR 10kΩ, 1/10W				C217	NDC21HJ-560X	CAPACITOR 56pF, 50V
			R218	NRSA02J-331X	MG RESISTOR 330Ω, 1/10W				C218	NCB21AK-105X	CAPACITOR 1μF, 10V
			R901	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W				C222	NCB21AK-105X	CAPACITOR 1μF, 10V
			R902	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W				C225	NCB21EK-104X	CAPACITOR 0.1μF, 25V
			R903	NRSA02J-680X	MG RESISTOR 68Ω, 1/10W				C901	NCB21HK-331X	CAPACITOR 330pF, 50V
			R904	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W				C902	NCB21HK-331X	CAPACITOR 330pF, 50V
			R905	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W				C903	NCB21HK-471X	CAPACITOR 470pF, 50V
			R906	NQL402M-100X	COIL 10μH				C904	NCB21HK-471X	CAPACITOR 470pF, 50V
			R907	NQL402M-100X	COIL 10μH				C905	NCB21HK-331X	CAPACITOR 330pF, 50V
			R908	NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W				C906	NCB21HK-331X	CAPACITOR 330pF, 50V
			R909	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W				C907	NCB21HK-471X	CAPACITOR 470pF, 50V
			R910	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W				C908	NCB21HK-471X	CAPACITOR 470pF, 50V
			R911	NRSA02J-750X	MG RESISTOR 75Ω, 1/10W				C910	NCB21HK-102X	CAPACITOR 0.001μF, 50V
			R912	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W				C912	NCB21HK-102X	CAPACITOR 0.001μF, 50V
			R913	NRSA02J-101X	MG RESISTOR 100Ω, 1/10W				C913	NCB21HK-103X	CAPACITOR 0.01μF, 50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C914		NCB21HK-103X	CAPACITOR 0.01μF,50V
C915		NCB21HK-103X	CAPACITOR 0.01μF,50V
C916		NCB21HK-223X	CAPACITOR 0.022μF,50V
C917		NCB21HK-223X	CAPACITOR 0.022μF,50V
C918		NCB21HK-223X	CAPACITOR 0.022μF,50V
C921		NDC21HJ-330X	CAPACITOR 33pF,50V
C923		QEKJ1CM-476	E CAPACITOR 47μF,16V
C924		NCB21HK-103X	CAPACITOR 0.01μF,50V
C925		NCB21HK-223X	CAPACITOR 0.022μF,50V
C927		QEKJ1CM-476	E CAPACITOR 47μF,16V
C930		NCB21HK-103X	CAPACITOR 0.01μF,50V
C931		QEKJ1CM-476	E CAPACITOR 47μF,16V
C933		NCB21HK-331X	CAPACITOR 330pF,50V
C934		NCB21HK-331X	CAPACITOR 330pF,50V
C935		NCB21HK-471X	CAPACITOR 470pF,50V
C936		NCB21HK-471X	CAPACITOR 470pF,50V
C937		NCB21HK-331X	CAPACITOR 330pF,50V
C938		NCB21HK-331X	CAPACITOR 330pF,50V
C939		NCB21HK-471X	CAPACITOR 470pF,50V
C940		NCB21HK-471X	CAPACITOR 470pF,50V
C941		QETJ0JM-477	E CAPACITOR 470μF,6.3V
C942		QEKJ1CM-476	E CAPACITOR 47μF,16V
C943		QEKJ1CM-476	E CAPACITOR 47μF,16V
C945		QEKJ1CM-106	E CAPACITOR 10μF,16V
C946		QEKJ1CM-106	E CAPACITOR 10μF,16V
C947		QETJ0JM-477	E CAPACITOR 470μF,6.3V
C951		QEKJ1CM-476	E CAPACITOR 47μF,16V
L201		QQL29BK-1R0Z	COIL 1μH
L202		QQL071J-330Y	COIL 33μH
L203		QQL071J-220Y	COIL 22μH
L204		QQL29BJ-100Z	COIL 10μH
L206		QQL071J-220Y	COIL 22μH
L901		QQL231J-R22Y	COIL 0.22μH
L902		QQL071J-1R0Y	COIL 1μH
L903		QQL071J-150Y	COIL 15μH
L904		QQL071J-150Y	COIL 15μH
L910		QQL071J-1R0Y	COIL 1μH
L913		QQL071J-4R7Y	COIL 4.7μH
L914		QQL071J-4R7Y	COIL 4.7μH
L915		QQL071J-4R7Y	COIL 4.7μH
L916		QQL071J-4R7Y	COIL 4.7μH
L917		QQL071J-4R7Y	COIL 4.7μH
L918		QQL071J-4R7Y	COIL 4.7μH
L919		QQL071J-4R7Y	COIL 4.7μH
L920		QQL071J-4R7Y	COIL 4.7μH
△ ET1		PQ21987-1-1	EATH PLATE(TERMINAL)
TB1		LP30712-008B	TERMINAL BOARD ASSY
OT1		QYTDSF3008Z	SCREW,X8
J901		PEMC1177	RGB21PIN SOCKET,AV1 IN/OUT
J902		PEMC1177	RGB21PIN SOCKET,AV2/DECODER
J903		QND0085-001	S JACK,S OUT
J912		QNN0021-003	PIN JACK,A.OUT(L)
J913		QNN0021-002	PIN JACK,A.OUT(R)
J923		PEMC1190	MINI JACK,JLIP
J924		QNS0150-001	2.5 JACK,LANC
J925		PU60659	MINI JACK,SAT.CTL
J926		PU60659	MINI JACK,PAUSE/RAE
WR901		QUB320-07ZAZA	SIN TWIST WIRE
CN911		QGF1208F1-14	FPC CONNECTOR,(1-14)S-SUB
CN912		QGF1208F1-08	FPC CONNECTOR,(1-8)NAVIGATION
CN913		QGB2024J1-12S	CONNECTOR,(1-12)MAIN

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
CN914		QGB2024J1-12S	CONNECTOR,(1-12)MAIN
CN915		QGB2024J1-05S	CONNECTOR,(1-5)MAIN
CN917		QGB2024J1-10S	CONNECTOR,(1-10)MAIN

AUDIO CONTROL HEAD BOARD ASSEMBLY <12>

PW1	LPA10010-01A1	A/C HEAD BOARD ASSY
CN1	QGF1208F1-07	FPC CONNECTOR

DEMOD BOARD ASSEMBLY <14>

PW1	LPA10094-01C	DEMOD BOARD ASSY
IC6701	MSP34VCDT	IC
	or MSP3417D	IC
Q6701	2SC3936/BC/-X	TRANSISTOR
D6701	1SS133	DIODE
	or 1N4148M	DIODE
R6701	NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
R6702	NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R6703	NRSA02J-470X	MG RESISTOR 47Ω,1/10W
R6704	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6705	NRSA02J-271X	MG RESISTOR 270Ω,1/10W
R6706	NRSA02J-151X	MG RESISTOR 150Ω,1/10W
R6707	NRSA02J-220X	MG RESISTOR 22Ω,1/10W
R6708	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R6709	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R6710	NRSA02J-100X	MG RESISTOR 10Ω,1/10W
R6711	NRSA02J-684X	MG RESISTOR 680kΩ,1/10W
R6712	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6714	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R6716	NRSA02J-470X	MG RESISTOR 47Ω,1/10W
R6719	QRE141J-103Y	RESISTOR 10kΩ,1/4W
R6720	NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
R6721	NRSA02J-562X	MG RESISTOR 5.6kΩ,1/10W
C6701	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6702	NCB21HK-222X	CAPACITOR 0.0022μF,50V
C6704	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6705	NCB21HK-102X	CAPACITOR 0.001μF,50V
C6707	NDC21HJ-470X	CAPACITOR 47pF,50V
C6708	NDC21HJ-8R0X	CAPACITOR 8pF,50V
C6709	NDC21HJ-1R0X	CAPACITOR 1pF,50V
C6713	NCF21CZ-224X	CAPACITOR 0.22μF,16V
C6714	NCB21HK-682X	CAPACITOR 0.0068μF,50V
C6715	QEKJ1HM-225	E CAPACITOR 2.2μF,50V
C6716	NCB21HK-682X	CAPACITOR 0.0068μF,50V
C6717	QEKJ1HM-225	E CAPACITOR 2.2μF,50V
C6719	QEKJ1CM-106	E CAPACITOR 10μF,16V
C6720	QEKJ1CM-106	E CAPACITOR 10μF,16V
C6721	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6723	NCB21HK-103X	CAPACITOR 0.01μF,50V
C6724	QEKJ1HM-225	E CAPACITOR 2.2μF,50V
L6701	QQL231J-1R0Y	COIL 1μH
L6702	QQL231J-3R3Y	COIL 3.3μH

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
			X6701	QAX0443-001 CRYSTAL RESONATOR
			K6701	NQR0200-003X FERRITE BEAD
			K6702	NQR0200-003X FERRITE BEAD
			K6703	NQR0200-003X FERRITE BEAD
			K6704	NQR0200-003X FERRITE BEAD
			K6705	NQR0200-003X FERRITE BEAD
			K6706	NQR0200-003X FERRITE BEAD
			K6707	NQR0200-003X FERRITE BEAD
			BK1	LP40077-001A BRACKET(BOARD)
			CN6701	QGG2502K1-10 HEADER PIN

S-SUB BOARD ASSEMBLY <15>

PW1	LPA10103-01A	S-SUB BOARD ASSY	
IC501	JCP8018	IC	
	or JCP8028-01	IC	
	or JCP8038	IC	
	or JCP8028	IC	
IC502	VC2076DP	IC	
R503	NRSA02J-221X	MG RESISTOR	220Ω, 1/10W
R504	NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
R505	NRSA02J-392X	MG RESISTOR	3.9kΩ, 1/10W
R506	NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
R507	NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W
R508	NRSA02J-151X	MG RESISTOR	150Ω, 1/10W
R509	NRSA02J-162X	MG RESISTOR	1.6kΩ, 1/10W
R510	NRVA02D-102X	CMF RESISTOR	1kΩ, 1/10W
R511	NRVA02D-471X	CMF RESISTOR	470Ω, 1/10W
R512	NRVA02D-102X	CMF RESISTOR	1kΩ, 1/10W
R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ, 1/10W
R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ, 1/10W
R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ, 1/10W
R516	NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R517	NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R525	NRSA02J-125X	MG RESISTOR	1.2MΩ, 1/10W
R527	NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
R531	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R532	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R533	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R534	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R535	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R536	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
C501	QEKJ1HM-225	E CAPACITOR	2.2μF, 50V
C502	QEKJ1EM-475	E CAPACITOR	4.7μF, 25V
C503	QEKJ1HM-225	E CAPACITOR	2.2μF, 50V
C504	NCB21EK-104X	CAPACITOR	0.1μF, 25V
C505	QEKJ1EM-475	E CAPACITOR	4.7μF, 25V
C506	NCB21EK-104X	CAPACITOR	0.1μF, 25V
C507	QEKJ0JM-227	E CAPACITOR	220μF, 6.3V
C508	QEPF1HM-474	NP E CAPACITOR	0.47μF, 50V
C509	QEKJ1CM-106	E CAPACITOR	10μF, 16V
C510	QEKJ0JM-227	E CAPACITOR	220μF, 6.3V
C511	NCB21HK-103X	CAPACITOR	0.01μF, 50V
C512	NCB21HK-103X	CAPACITOR	0.01μF, 50V
C513	QEKJ1EM-475	E CAPACITOR	4.7μF, 25V
C514	NCB21HK-103X	CAPACITOR	0.01μF, 50V
C515	NCB21HK-103X	CAPACITOR	0.01μF, 50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
			C516	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C517	NCF21EZ-104X CAPACITOR 0.1μF, 25V
			C518	NCB21EK-104X CAPACITOR 0.1μF, 25V
			C519	QEKJ1HM-225 E CAPACITOR 2.2μF, 50V
			C520	QERF1EM-475 E CAPACITOR 4.7μF, 25V
			C521	QEKJ1EM-475 E CAPACITOR 4.7μF, 25V
			C522	QEKJ1HM-225 E CAPACITOR 2.2μF, 50V
			C523	QEKJ1HM-225 E CAPACITOR 2.2μF, 50V
			C524	NDC21HG-301X CAPACITOR 300pF, 50V
			C525	NDC21HG-301X CAPACITOR 300pF, 50V
			C526	NDC21HJ-101X CAPACITOR 100pF, 50V
			C527	NDC21HJ-181X CAPACITOR 180pF, 50V
			C528	NDC21HG-271X CAPACITOR 270pF, 50V
			C529	NDC21HG-820X CAPACITOR 82pF, 50V
			C530	NDC21HG-221X CAPACITOR 220pF, 50V
			C531	NDC21HG-301X CAPACITOR 300pF, 50V
			C532	NDC21HG-301X CAPACITOR 300pF, 50V
			C533	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C534	QETJ0JM-477 E CAPACITOR 470μF, 6.3V
			C535	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C551	QEKJ1HM-105 E CAPACITOR 1μF, 50V
			C552	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C553	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C554	QEKJ1HM-105 E CAPACITOR 1μF, 50V
			C555	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C556	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C557	QEKJ1HM-105 E CAPACITOR 1μF, 50V
			C558	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C559	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C560	QEKJ1HM-105 E CAPACITOR 1μF, 50V
			C561	QEKJ1HM-105 E CAPACITOR 1μF, 50V
			C563	NCB21HK-103X CAPACITOR 0.01μF, 50V
			C568	NDC21HJ-680X CAPACITOR 68pF, 50V
			C569	NDC21HJ-680X CAPACITOR 68pF, 50V
			C570	NDC21HJ-680X CAPACITOR 68pF, 50V
			C571	NDC21HJ-680X CAPACITOR 68pF, 50V
			C572	NDC21HJ-680X CAPACITOR 68pF, 50V
			C573	NDC21HJ-680X CAPACITOR 68pF, 50V
			L501	QQL29BJ-100Z COIL 10μH
			L503	QQL29BJ-100Z COIL 10μH
			L504	QQL29BJ-100Z COIL 10μH
			BK1	LP40077-001A BRACKET(BOARD)
			CN511	QGG2503K2-30 HEADER PIN, (1-30) MAIN
			CN512	QGF1209F2-14 FFC/FPC CONNECTOR, (1-14) TERMINAL

NAVIGATION BOARD ASSEMBLY <19> [LPB10108-001*]

There are currently two types of Navigation boards in used, these are the LPB10108-001* and the LPB10108-002*.

These two boards have different Schematic Diagrams and Parts Lists. Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.

PW1	LPA10108-01B	NAVIGATION BOARD ASSY
IC3301	MN101C12GCG	IC(MCU)
	or MN101C49HCG	IC(MCU)
	or MN101CP12GAFCG	IC(MCU)

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
		or MN101CP49KAFCG	IC(MCU)	
IC3401		74HC4053D	IC	
IC3402		74HC4053D	IC	
IC3403		AT45D011-SC-X	IC	
IC3405		TC7W241FU	IC(DIGITAL)	
IC3406		TC7W241FU	IC(DIGITAL)	
D3401		RB751V-40-X	SB DIODE	
D3402		RB751V-40-X	SB DIODE	
D3407		1SS355	DIODE	
R3302		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3313		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3321		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3322		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3323		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3326		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3328		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3329		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3330		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3331		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3332		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3333		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3339		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3340		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3342		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3343		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3345		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3346		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3347		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3348		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3349		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3350		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3351		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3352		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3371		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3372		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3373		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3386		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R3401		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3402		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3403		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3404		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3412		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3414		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3415		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3422		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3432		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3452		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3462		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R3463		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3464		NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3465		NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R3466		NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3468		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R3472		NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R3475		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
C3312		NDC21HJ-120X	CAPACITOR	12pF,50V
C3313		NDC21HJ-120X	CAPACITOR	12pF,50V
C3314		NCB21EK-104X	CAPACITOR	0.1μF,25V
C3321		NDC21HJ-220X	CAPACITOR	22pF,50V
C3322		NDC21HJ-220X	CAPACITOR	22pF,50V
C3323		NDC21HJ-220X	CAPACITOR	22pF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
C3333		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
C3345		NDC21HJ-220X	CAPACITOR	22pF,50V
C3346		NDC21HJ-220X	CAPACITOR	22pF,50V
C3347		NDC21HJ-220X	CAPACITOR	22pF,50V
C3401		QEKJ0JM-226	E CAPACITOR	22μF,6.3V
C3402		NCB21EK-104X	CAPACITOR	0.1μF,25V
C3403		NCB21EK-104X	CAPACITOR	0.1μF,25V
C3404		NCB21EK-104X	CAPACITOR	0.1μF,25V
C3405		NCB21EK-104X	CAPACITOR	0.1μF,25V
C3414		NCB21EK-104X	CAPACITOR	0.1μF,25V
X3301		QAX0584-001	CRYSTAL RESONATOR	
BK1		LP40425-001A	BRACKET(BOARD)	
CN3401		QGG2502K1-13	HEADER PIN,(1-13)	
CN3402		QGF1207F1-08	FPC CONNECTOR,(1-8)TERMINAL	

NAVIGATION BOARD ASSEMBLY <19> [LPB10108-002*]

PW1	LPA10108-11A	NAVIGATION BOARD ASSY	
IC3301	MN101C12GCG	IC	
	or MN101C49HCG	IC	
	or MN101CP12GAFCG	IC	
	or MN101CP49KAFCG	IC	
IC3401	74HC4053D	IC	
IC3402	74HC4053D	IC	
IC3403	AT45DB011-SC-X	IC	
IC3405	TC7W241FU	IC(DIGITAL)	
IC3406	TC7W241FU	IC(DIGITAL)	
IC3408	SN74LV08APW	IC	
IC3409	TC7WT125FU	IC(DIGITAL)	
Q3403	2SD1450/ST-T	TRANSISTOR	
D3401	RB751V-40-X	SB DIODE	
D3402	RB751V-40-X	SB DIODE	
D3407	1SS355	DIODE	
D3408	RD3.6ES/B2/-T2	ZENER DIODE	
	or MTZJ3.6B	ZENER DIODE	
R3302	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3313	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3321	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3322	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3323	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3326	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3328	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3329	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3330	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3331	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3332	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R3333	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
R3339	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3340	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R3342	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3343	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3345	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3346	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3347	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3348	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3349	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R3350	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
R3351			NRSA02J-0R0X	MG RESISTOR				or 2SC3199/YG/-T	TRANSISTOR
R3352			NRSA02J-0R0X	MG RESISTOR	Q7003			2SA933AS/QRS/-T	TRANSISTOR
R3371			NRSA02J-0R0X	MG RESISTOR				or 2SA1267/YG/-T	TRANSISTOR
R3372			NRSA02J-0R0X	MG RESISTOR	D7002			RD9.1ES/B2/-T2	ZENER DIODE
R3373			NRSA02J-0R0X	MG RESISTOR				or UZ9.1BSB	ZENER DIODE
R3386			NRSA02J-103X	MG RESISTOR				or MTZJ9.1B	ZENER DIODE
R3401			NRSA02J-0R0X	MG RESISTOR	D7004			1SS133	DIODE
R3402			NRSA02J-0R0X	MG RESISTOR	D7005			1SS133	DIODE
R3403			NRSA02J-0R0X	MG RESISTOR	D7006			1SS133	DIODE
R3404			NRSA02J-0R0X	MG RESISTOR	D7007			1SS133	DIODE
R3412			NRSA02J-0R0X	MG RESISTOR	D7012			1SS133	DIODE
R3414			NRSA02J-0R0X	MG RESISTOR	D7013			1SS133	DIODE
R3415			NRSA02J-0R0X	MG RESISTOR	D7014			1SS133	DIODE
R3422			NRSA02J-0R0X	MG RESISTOR	R7001			QRE141J-471Y	RESISTOR
R3432			NRSA02J-0R0X	MG RESISTOR	R7002			QRE141J-471Y	RESISTOR
R3462			NRSA02J-103X	MG RESISTOR	R7003			QRE141J-471Y	RESISTOR
R3465			NRSA02J-472X	MG RESISTOR	R7004			QRE141J-471Y	RESISTOR
R3466			NRSA02J-0R0X	MG RESISTOR	R7005			QRE141J-103Y	RESISTOR
R3468			NRSA02J-103X	MG RESISTOR	R7006			QRE141J-103Y	RESISTOR
R3472			NRSA02J-472X	MG RESISTOR	R7007			QRE141J-103Y	RESISTOR
R3475			NRSA02J-103X	MG RESISTOR	R7008			QRE141J-103Y	RESISTOR
R3476			NRSA02J-101X	MG RESISTOR	R7013			QRE141J-103Y	RESISTOR
R3477			NRSA02J-271X	MG RESISTOR	R7020			QRE141J-103Y	RESISTOR
C3312			NDC21HJ-120X	CAPACITOR	R7021			QRE141J-122Y	RESISTOR
C3313			NDC21HJ-120X	CAPACITOR	R7022			QRE141J-182Y	RESISTOR
C3314			NCB21EK-104X	CAPACITOR	R7023			QRE141J-222Y	RESISTOR
C3321			NDC21HJ-220X	CAPACITOR	R7024			QRE141J-272Y	RESISTOR
C3322			NDC21HJ-220X	CAPACITOR	R7025			QRE141J-472Y	RESISTOR
C3323			NDC21HJ-220X	CAPACITOR	R7026			QRE141J-682Y	RESISTOR
C3333			NRSA02J-472X	MG RESISTOR	R7027			QRE141J-153Y	RESISTOR
C3345			NDC21HJ-220X	CAPACITOR	R7028			QRE141J-393Y	RESISTOR
C3346			NDC21HJ-220X	CAPACITOR	R7030			QRE141J-103Y	RESISTOR
C3347			NDC21HJ-220X	CAPACITOR	R7031			QRE141J-122Y	RESISTOR
C3401			QEKJ0JM-226	E CAPACITOR	R7032			QRE141J-182Y	RESISTOR
C3402			NCB21EK-104X	CAPACITOR	R7033			QRE141J-222Y	RESISTOR
C3403			NCB21EK-104X	CAPACITOR	R7034			QRE141J-272Y	RESISTOR
C3404			NCB21EK-104X	CAPACITOR	R7035			QRE141J-472Y	RESISTOR
C3405			NCB21EK-104X	CAPACITOR	R7036			QRE141J-682Y	RESISTOR
C3414			NCB21EK-104X	CAPACITOR	R7037			QRE141J-153Y	RESISTOR
C3416			NCB21EK-104X	CAPACITOR	R7038			QRE141J-393Y	RESISTOR
C3417			NCB21EK-104X	CAPACITOR	R7040			QRE141J-331Y	RESISTOR
C3419			NCB21HK-103X	CAPACITOR	R7041			QRE141J-331Y	RESISTOR
X3301			QAX0584-001	CRYSTAL RESONATOR	R7042			QRE141J-331Y	RESISTOR
BK1			LP40425-001A	BRACKET(BOARD)	R7044			QRE141J-104Y	RESISTOR
CN3401			QGG2502K1-13	HEADER PIN,(1-13)MAIN	R7045			QRE141J-102Y	RESISTOR
CN3402			QGF1207F1-08	FPC CONNECTOR,(1-8)TERMINAL	R7046			QRE141J-394Y	RESISTOR
					R7047			QRE141J-101Y	RESISTOR
					R7048			QRE141J-472Y	RESISTOR
					C7001			QCFB1HZ-104	CAPACITOR
					C7002			QETN1HM-106	E CAPACITOR
					C7007			QETN1HM-476	E CAPACITOR
					C7009			QCSB1HJ-150	CAPACITOR
					C7010			QCFB1HZ-104	CAPACITOR
					C7011			QETN1AM-227	E CAPACITOR
					C7019			QDVB1EZ-223Y	CAPACITOR
					C7022			QDVB1EZ-223Y	CAPACITOR
					C7192			QCBB1HJ-681	CAPACITOR
					C7194			QCBB1HJ-681	CAPACITOR
					C7197			QCBB1HK-221	CAPACITOR
					L7191			QRE141J-101Y	RESISTOR
					L7192			QRE141J-101Y	RESISTOR

DISPLAY BOARD ASSEMBLY <28>									
PW1			LPA10067-02A1	DISPLAY BOARD ASSY					
IC7001			M35500BGP	IC					
			or M35500AGP	IC					
			or M35500BFP	IC					
IC7002			PNA4652M00XB	IR DETECT UNIT					
			or GP1U281X	IR DETECT UNIT					
Q7001			DTC144WS	TRANSISTOR					
Q7002			2SC1740S/QRS/-T	TRANSISTOR					

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
L7196		QQL071J-1R0Y	COIL	1μH
S7001		QSW0456-002Z	TACT SWITCH,STAND-BY	
S7002		QSW0456-002Z	TACT SWITCH,A.MONITOR	
S7003		QSW0456-002Z	TACT SWITCH,C.RESET	
S7004		QSW0456-002Z	TACT SWITCH,IN/OUT	
S7005		QSW0456-002Z	TACT SWITCH,RAE	
S7006		QSW0456-002Z	TACT SWITCH,START	
S7007		QSW0456-002Z	TACT SWITCH,STOP/EJECT	
S7008		QSW0456-002Z	TACT SWITCH,MARK	
S7009		QSW0456-002Z	TACT SWITCH,ERASE	
S7010		QSW0456-002Z	TACT SWITCH,D.TBC/NR	
S7011		QSW0456-002Z	TACT SWITCH,SP/LP/EP	
S7012		QSW0456-002Z	TACT SWITCH,TIMER	
S7013		QSW0456-002Z	TACT SWITCH,SAT.CTL	
S7014		QSW0456-002Z	TACT SWITCH,VCR/TV	
S7015		QSW0456-002Z	TACT SWITCH,SYN.EDIT	
S7016		QSW0456-002Z	TACT SWITCH,SVHS ET	
S7017		QSW0456-002Z	TACT SWITCH,DISPLAY	
DI7001		QLF0032-002	FL TUBE	
HD1		LP30428-001A	FDP HOLDER(L),DI7001	
HD2		LP30429-001A	FDP HOLDER(R),DI7001	
OT1		PU59915-105	#500SPACER0.01,C7197	
J7191		PEMC1126-04	PIN JACK,VIDEO IN	
J7192		PEMC0922-03	PIN JACK(SW),A(L)IN	
J7193		PEMC0922-02	PIN JACK(SW),A(R)IN	
J7194		QND0085-001	S JACK,S VIDEO	
CN7001		QGF1207C1-14	FPC CONNECTOR,(1-14)MAIN	
CN7002		QGF1202C1-08	FPC CONNECTOR,(1-8)M.DOOR	
CN7191		QGF1207C1-05	FPC CONNECTOR,(3-7)MAIN	
CN7192		QGF1207C1-04	FPC CONNECTOR,(1-4)	

REC SAFETY BOARD ASSEMBLY <32>

PW2	LPA10067-01B2	REC SAFETY BOARD ASSY
S7041	QSW0602-004	PUSH SWITCH
FW7001	QUM032-07A4A4	PARA RIBON WIRE

AUDIO ERASE BOARD ASSEMBLY <46>

PW2	LPA10106-03A2	AUDIO ERASE BOARD ASSY	
Q2051	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
	or 2SD1819A/QRS/-X	TRANSISTOR	
R2054	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
C2052	QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V
C2053	NCB21HK-332X	CAPACITOR	0.0033μF,50V
C2054	NCB21HK-103X	CAPACITOR	0.01μF,50V
C2055	QEKJ1CM-106	E CAPACITOR	10μF,16V
T2051	PELN0860	OSC TRANSFORMER	
CN2052	QGB2024J1-04S	CONNECTOR,(1-4)MAIN	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION

LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10010-01A2	LOADING MOTOR BOARD ASSY
CN1	QGB2533K1-02	CONNECTOR